W I N - D I G I P E T *Premium Edition*

CONTROL SYSTEM FOR MODEL RAILROADS USING
MÄRKLIN-DIGITAL-COMPONENTS,
UHLENBROCK-INTELLIBOX WITH EXTENDED PROTOCOL, ROCO DIGITAL,

FLEISCHMANN TWIN-CENTER AND LENZ DIGITAL PLUS 2.0 / 3.0/3.5

Program-Version 9.0 - 32 Bit for operating systems
Microsoft Windows 98SE / ME / NT SP6 / 2000 SP4 / XP SP1&2

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Revision: October 2005

My special thanks applies to Mr. Rüdiger Dietloff, Cologne for his ideas and the production of concepts for the advancement of Win-Digipet and also to Mr. Markus Herzog, Düren for his support with the programming.

CONTENTS

CONDITIONS OF USE

This program is the exclusive property of me, Dr. Peter Peterlin, Tilsitstrasse2a, D-50354 Hürth, Germany.

The purchase of this program confers to you, the buyer, and only the right to use the program, not the property thereof.

Neither the program nor any program file thereof nor this manual may be altered in whatever manner.

It is strictly prohibited to pass or transmit this program to third parties or persons, not even for testing purposes.

The Demo-version controls not more than 12 solenoid devices and 2 locomotives; only a maximum of 20 timetable lines is possible. The track diagram has a size of 50x30 symbol fields.

Despite utmost care with creating and testing the program, errors therein can unfortunately not be excluded. Should errors caused by the program itself occur, I shall do my level best to eliminate them free of charge. Moreover you find in the Internet at the address <http: // www.windigipet.de> under the frame "Download" tips and download possibilities.

Nevertheless, with the change of the program version and payment of the suitable update price the delivered CD-ROM has to be sent in any case back to me.
Errors caused by incompetent handling of the CD-ROM are at buyer‘s charge.

Any liability is expressly excluded for errors, mishaps and faults of any kind in and by the program and its manual.

Copyright covers all and any part of this manual and the program.

Tip!
In this manual there are many coloured images with details which can not to be seen in the printed manual so well. Open in this case, perhaps, in addition, the manual (manual 9.0.pdf) **for the WIN-DIGIPET 9.0** on CD-ROM or on the help in the program.

Quick entrance– First steps: Installation/Program-Start

You owe a digital model railroad layout and just purchased **WIN-DIGIPET 9.0**. You are eager to see whether or not something will „move“ on your layout under the control of the program.

For people with little time on their hands, a **quick start** – step by step- is described here. However, it is necessary to study the complete manual- **from start to finish**- to understand **all** functions and possibilities of WIN-DIGIPET 9.0.

This quick start will illustrate...

- how to create the basic system settings,
- switch two solenoid devices,
- control one locomotive,
- display feedback contacts,
- create and switch a route.

Before continuing please read...

- chapter **2** of this manual – sections **2.1 to 2.8**
- and chapter 3 - sections **3.1, 3.2 and 3.3**

Then proceed...

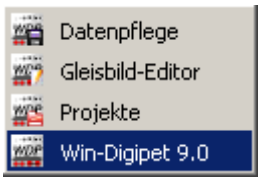
- with settings according to section **2.1 to 2.5** depending on the requirements of your computer/model railroad
- and follow the instructions in section **3.2** and **3.3** of this manual.

Then you have installed **WIN-DIGIPET 9.0** on your computer and can begin with the quick entrance.

By the first program start the Original WIN-DIGIPET 9.0 CD-ROM must be placed in the drive. Later the original CD is automatically demanded after few starts of the program. Keep the original CD very carefully if you do not leave this in the drive.

First step- program start (see also 3.4)

Initially click on ‘Start’ in the task bar - ‘Programs’ - ‘WIN-DIGIPET 9.0’ on ‘WIN-DIGIPET 9.0’.



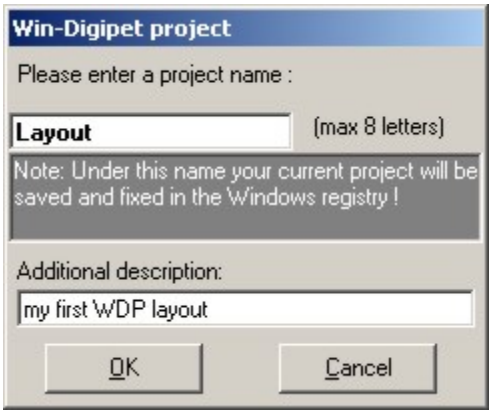
A selection window opens „Win-Digipet project“.

Enter the project name, not more than 8 characters long and below a description, not more than 50 maximum characters long.

You only need to do this **once** when you start the program for the first time. The project is saved under this name and recorded in the Windows registry.

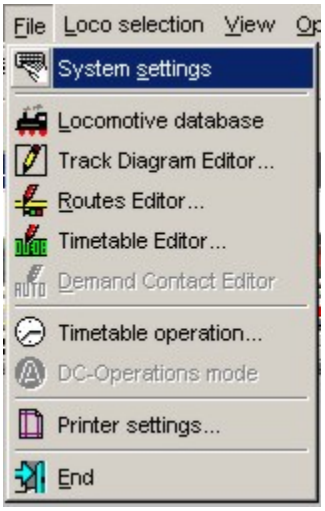
Further projects can be created later.

You are now in the main program of WIN-DIGIPET 9.0.



Quick entrance–Second step- System settings

System settings *(chapter **4**)*

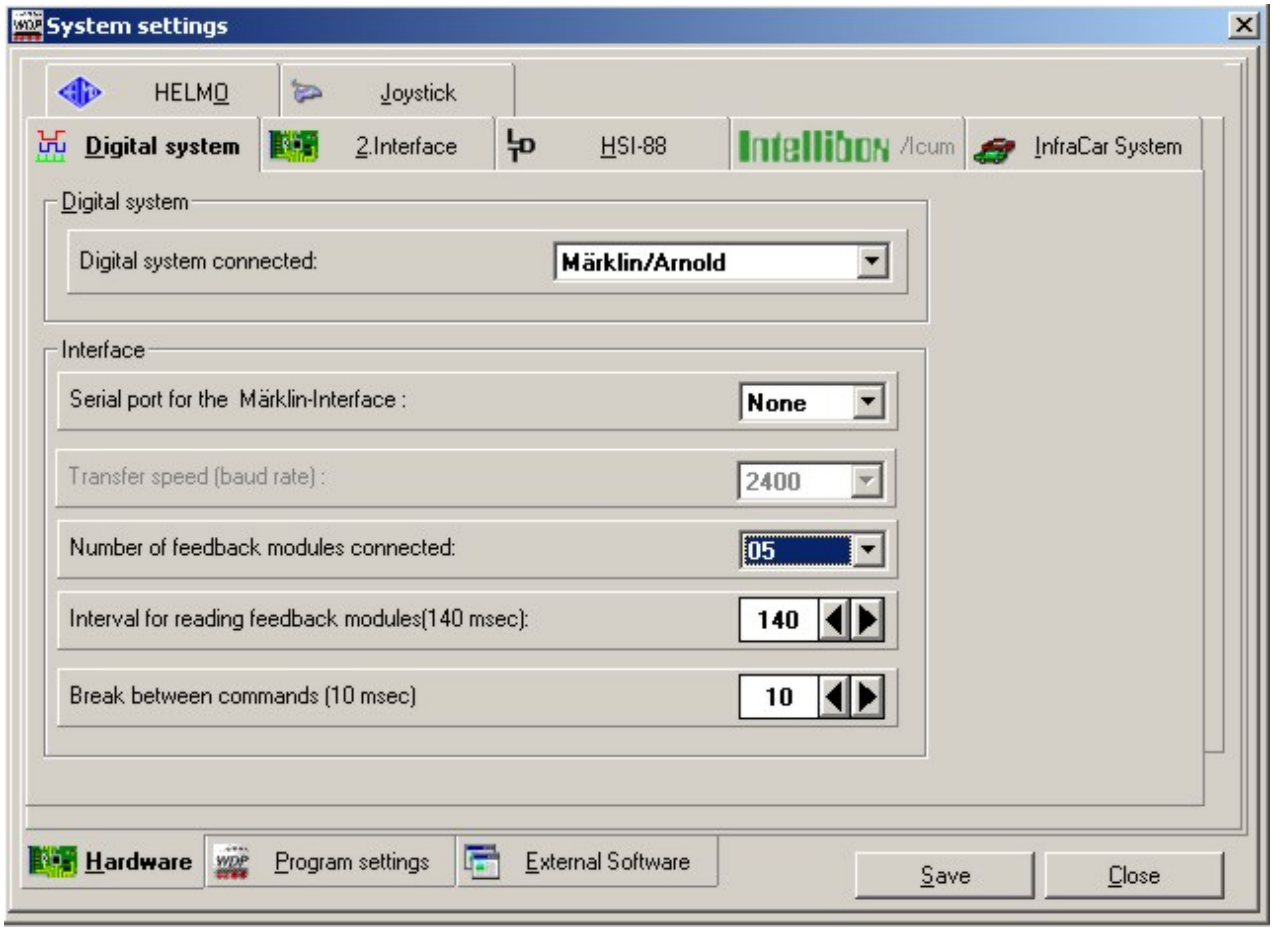


For installation of a working connection to your model railroad layout, you have to inform your system about...

- your digital system ,
- the serial port number
- and the number of feedback modules

Click in the menu bar on 'File' and then on 'System settings' or on the switch in the toolbar. A new window with the first index card 'Digital system' appears (see **4.1**).

Record the presently important settings on that index card.



- **Digital system connected:**
  Supported are:
  - The Märklin System with central unit 6020/6021and Interface 6050/6051
  - The Uhlenbrock/modeltreno INTELLIBOX
  - The Fleischmann TWIN-CENTER (similar to the Uhlenbrock Intellibox, however without the support of the Motorola- and Selectrix format)
  - The ICUM (an ISA-Bus-card of company modeltreno, Bologna).
  - Lenz Digital Plus Version 2.0 and
  - Lenz Digital Plus Version 3.0/3.5

- **Interface connection**:
  Eight serial com-port connections (COM 1 to COM 8) are catered for. Normally COM 1 is selected for the Interface. Select your own com-port from the list. An error message will be displayed, if you select a non-existent com-port when you attempt to save the setting.
  NONE is only for test purposes of the program without interface.

- **Number of connected feedback modules:**
  Select the **correct number** of feedback modules if you are using s88, which is usually the case. The max. number is 31. A wrong input could lead to errors in the function of the program.

  When using the LDT High Speed Interface HSI-88, please enter the number of feedback modules on the tab „Hardware – HSI-88“ into the corresponding fields.
  Should you **not use** feedback modules s88 or you want to run your model railroad without feedback contacts, you must **use none**.

  The possibility to enter data into this panel will be blanked out for the Lenz-System. In this case the maximum amount of feedback modules for WIN-DIGIPET and the Lenz-System (124 – means 992 contacts) will be automatically assigned by the program (see chapter **2.4**).

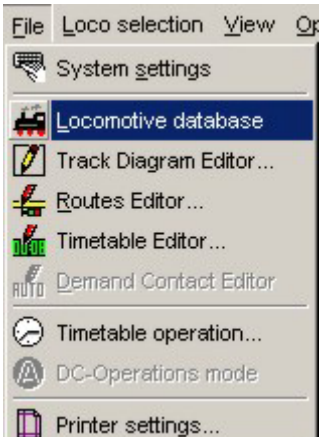
  Leave all other values on this and **all** other index cards and accept the **default values**.

  Having completed all entries, click on ‘Save’ and to close the window on ‘Cancel’.

  <u>Important!</u>
  If you use 8-pole track occupied modules, they count apply as ½ s88-back feedback modules. Hence, two 8-pole track occupied modules have to be registered as 1 s88 feedback module.

Quick entrance – Third step: Controlling locomotives

Controlling a locomotive

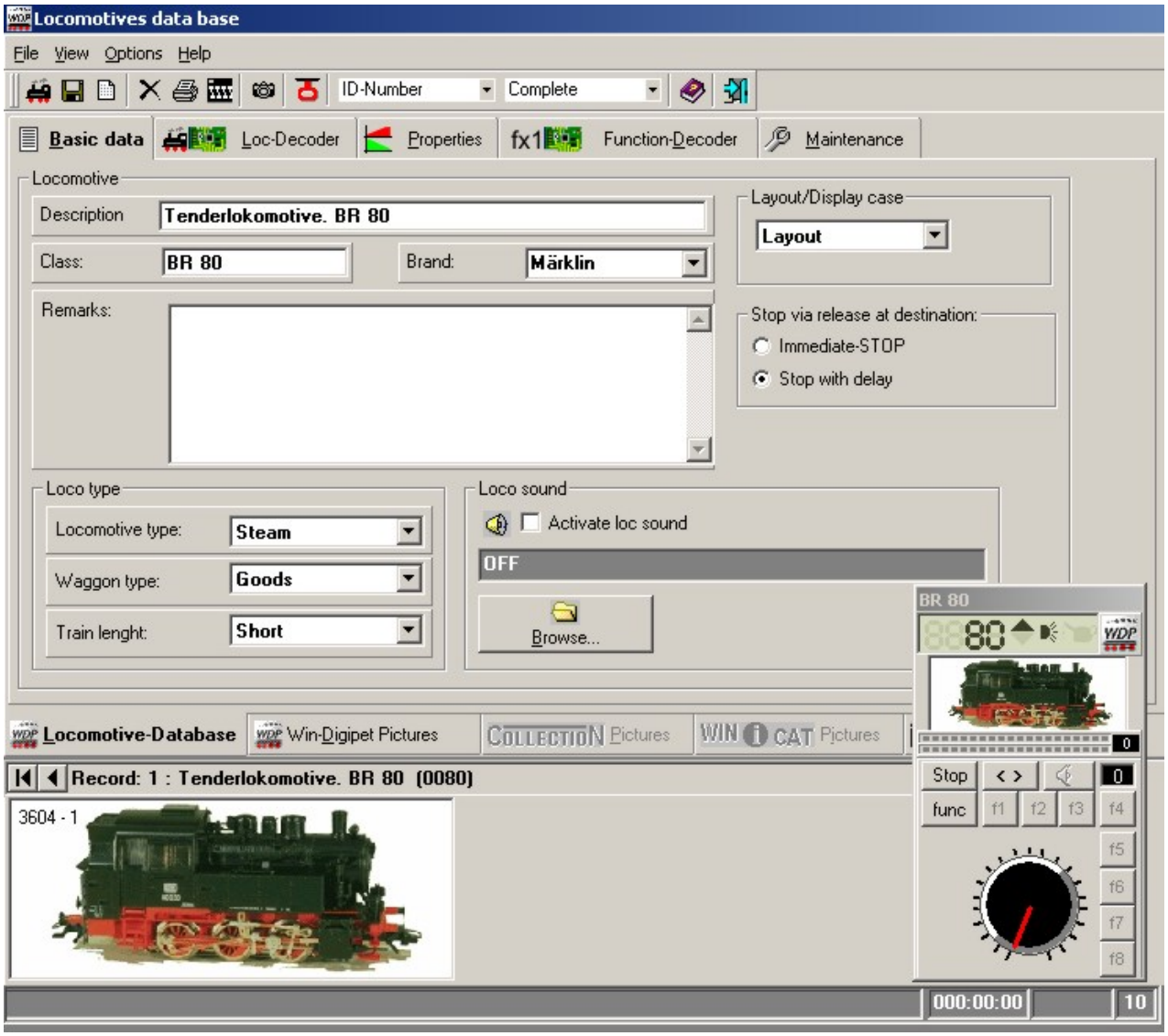


Click in the menu bar on 'File' and then on Locomotives data base' (see chapter **5**) or on the in the toolbar.

On the first index card „basic data " you register the data of your locomotives.

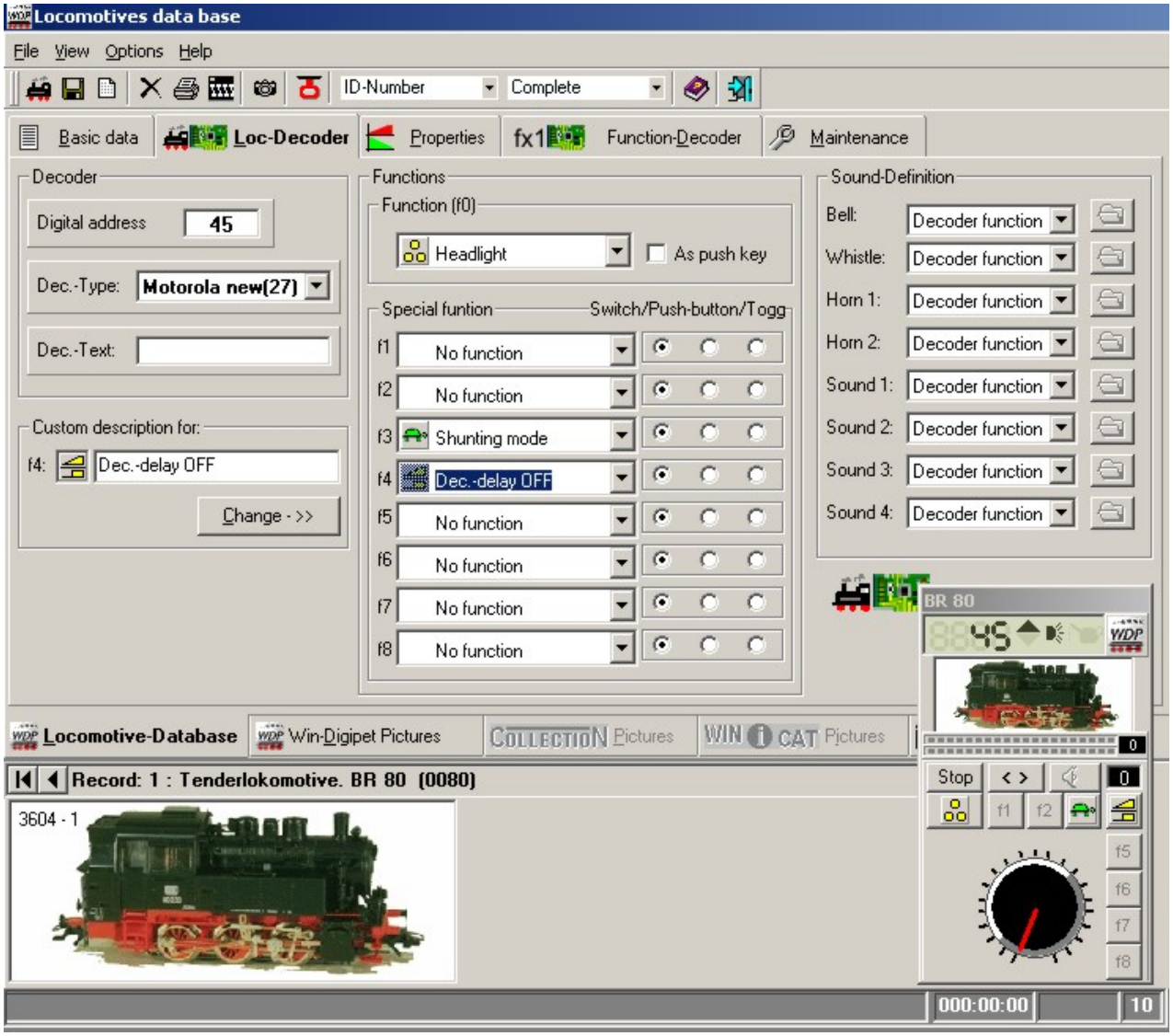
Two locomotives are given as default by Win-Digipet 9.0: a BR 80 and a Crocodile. For the quick start select the BR 80 for test purposes of one of your digital locomotives.

For your quick entrance use the BR 80 as test locomotive for one of your digital locomotives.



Read more about the scanning of own pictures and recording of your own locomotives in the manual under **5.2**.

Select on the index card „Locomotive-database - Loc-Decoder“ the needed decoder-type for your locomotive and register the address of the locomotive (here 80).

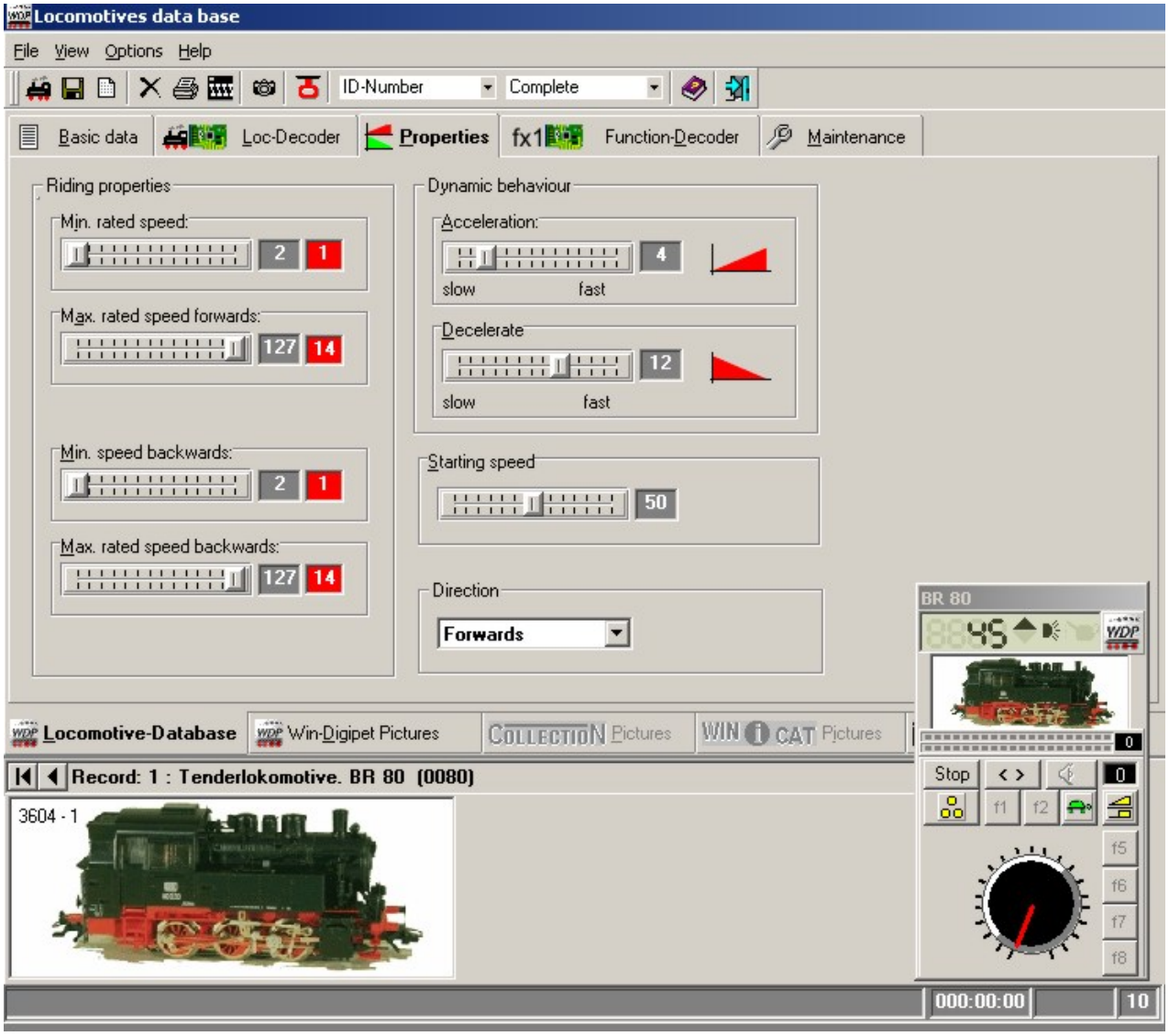


Select the function (f0) of the locomotive, which is in most cases the headlight. Below you can select the special functions of the locomotive. For this purpose open the selection fields with the small arrows and selected the desired pictogram and description.

On the index „Locomotive-Database - Properties“ you can now set the...

- minimum rated speed forwards
- minimum rated speed backwards
- maximum rated speed forwards
- maximum rated speed backwards
- the acceleration and deceleration

- the starting speed
- and the current travel direction (forward or backward) for locomotives with older decoders, that don't save the travel direction.



After a click on the turning knob of the locomotive control, the locomotive should start moving. The top indicator indicates the nominal speed and the indicator below the current speed.

You can now test also the other functions like **Stop**, **Turn**, **Function and special functions**.

Please take care when using special functions with decoders with new Motorola format and the Märklin CU 6021 the dip-switches of the CU should be set to OFF - ON - OFF - OFF.

You can now make experiments with the parameters for driving behaviour (see **5.5**).

All speed-adjust-ranges are divided in **128** steps. However the amount of speed-steps is depending on the type of decoder, which you have selected (see **5.4.3**, numbers in brackets).

Under “Running properties” you register the amount of steps for “min. rated speed” and “max. rated speed”; in the red panel on the right hand side, you will find the ordinal number to the related speed-step. In Version 9 you can now differ between backwards and forward direction for the speed settings.

- **Minimum rated speed** determines at which speed the locomotive just moves and does not stop, e.g. step „2“ for easy moving, step „4“ for „stiffer“ moving locomotives.
- **Maximum rated speed** determines up to which speed the locomotive may be accelerated without derailing in curves, e.g. „11“ = top speed.
- **Acceleration:** The acceleration rate determines whether the locomotive is accelerated fast or slow.
- **Deceleration:** The deceleration rate determines whether the locomotive is decelerated fast or slow.
- **Starting speed:** With this slide you select speed which is used when driving “Standard”-routes. We suggest a value between **50** and **70** for most cases.

Information!
These settings are independent from your locomotive’s decoder settings. These are not affected by your settings in the program.

It is recommended that you test your locomotives on your layout to find the best values of minimum/maximum rated speed and acceleration rate.

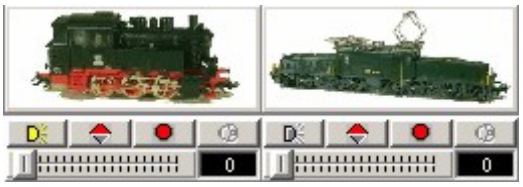
After every change in these fields you can test the effects directly with the locomotive control.

All functions of the locomotive controls („Maxi“ or „Mini“) are described in section **5.14**.

You can leave the locomotive database via the menu command <File> <Close> or with a click on the symbol ☒ or the symbol in the toolbar.

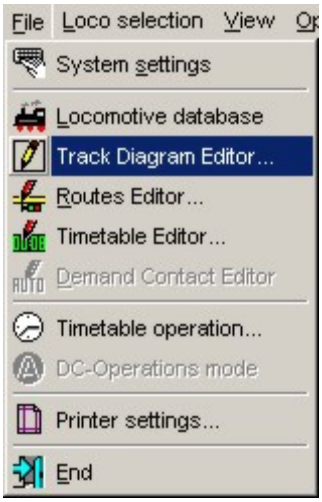
In the main program you can now use the modified test locomotive.

By a click with the left mouse button on of the locomotives pictures in the loco bar, you can open the locomotive’s control.



Quick entrance – Fourth step: Track diagram editor

Create track diagram, record solenoid devices and test, record feedback numbers



At first you will find an „empty“ track diagram. After you have recorded your locomotives and the system settings, create a track diagram.

Click in the main menu on ‘File’ and ‘Track diagram editor’ or on the switch in the toolbar.

The track diagram editor (chapter **6**) and its track symbols window appear.

A small block system (signal to signal) should demonstrate the handling in the quick start.

Create block system (see 6.3.4)

Click on the type field .in the toolbar of the symbols window. Click on the individual symbol. The mouse pointer changes from the pointer to an arrow with the selected symbol. The selected symbol is displayed in the lower left corner of the symbols window, next to the symbol the description text is displayed.

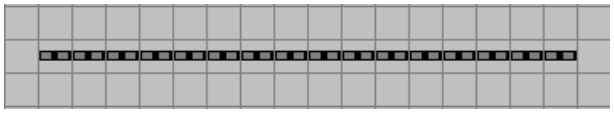
TIP!
When clicking on a symbol in the symbol window and holding the mouse button down, in the lower left corner the symbol is displayed with the symbols consecutive number. After releasing the mouse button the symbol’s description text appears.

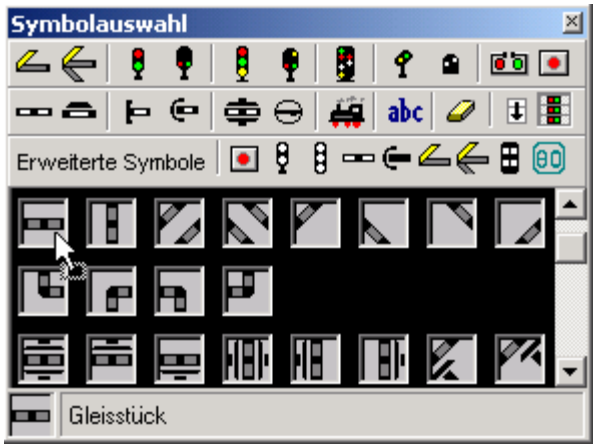
before and after


.

Place the symbol where needed in the track diagram and press the left mouse button a second time.

Drag the mouse pointer-with the left mouse button pressed- over the whole length of the block, if a symbol appears more than once, e.g. here „straight track“.

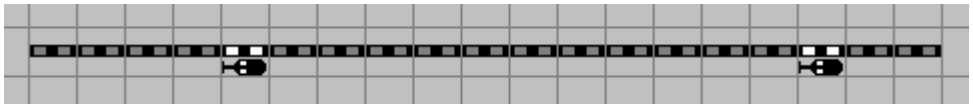




Then press the right mouse button: the present symbol is deactivated, the mouse pointer changes to an arrow and you are able to select the next symbol and place it.

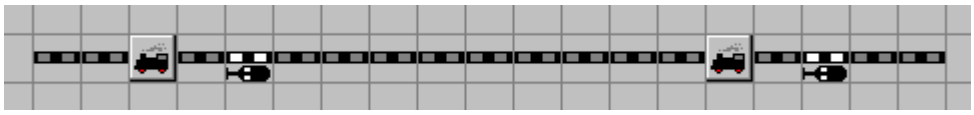
The symbol is attached to the mouse pointer if you double click on an already placed symbol- ready to be placed- without selecting it from the track symbols window.

Now place the two block signals as described above.



They are white, as they have no digital address assigned yet.

Also the train number symbols for the train number display have to be placed, if possible always **two fields in front** of a signal.

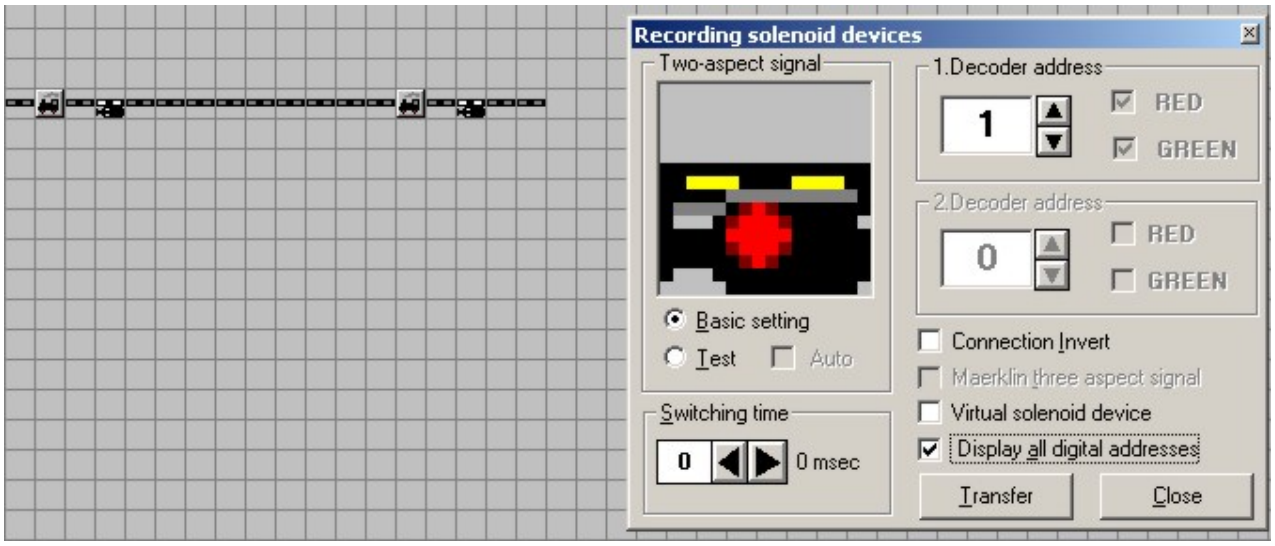


Allocation of digital addresses to solenoid devices (see 7.2)

Click on the menu <Record> <Solenoid devices> or on the switch in the toolbar.

The track symbol window disappears and the mouse pointer changes to an arrow with micro switches.

Point to the **left**-hand signal: It will be framed in red. Click on it: the window „Recording solenoid devices“ appears.



The signal is displayed as a big symbol in the top left hand. It also bears its type, e.g. „Two aspect signal“. Record its address.

Here, address1 is recorded, i.e. the signal is connected to the first solenoid device decoder, input 1 (1 of 4).

The status „RED“ and „GREEN“ for most solenoid devices are already checked/unchecked by the program.

The **„switching time**“ can be adjusted for each individual solenoid device. This might be useful for decouplers and older points. Normally it should be set to 0 msec for speed reasons.

The *„Basic position“* of the solenoid device is determined by a click on the big symbol.

To check your inputs, test the solenoid device: select „*Test*“ and click repeatedly on the big symbol. The device should switch without fault.

The solenoid device will be continuously switched every second, if you have activated the switch ‘**Auto’** next to ‘**Test**’. This function enables you to check the solenoid devices on the layout for their correct switching, even if they are distant from the computer.

All solenoid addresses are displayed in red in the track diagram if you have checked „Display all addresses“. It can be reversed by unchecking „Display all addresses“.

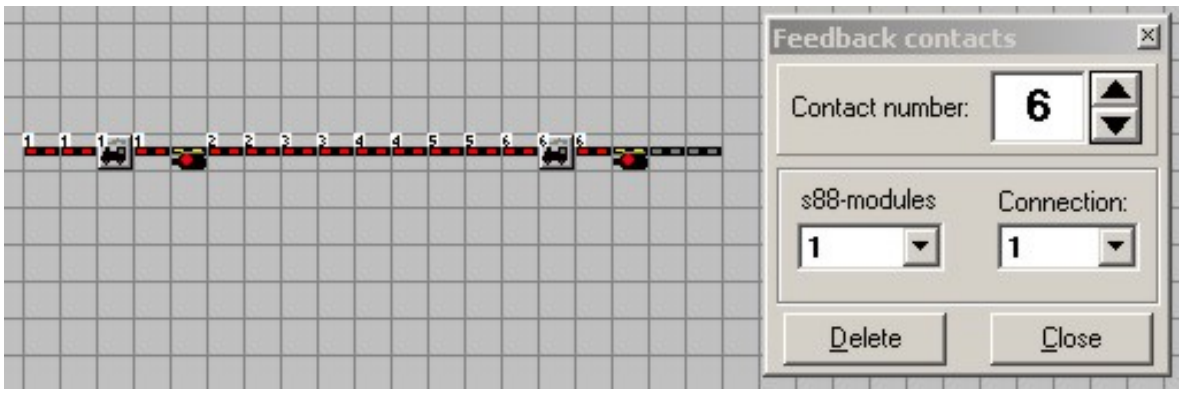
Finally, use the command **‘Transfer’** to place the solenoid devices into the track diagram. The track layout now shows the solenoid device in its basic setting.

Proceed in the same as above described for the left signal.

Recording feedback numbers (see 7.4)

Click on the menu <Record> <Feedback contacts> or on the switch in the toolbar.

The window „Feedback contacts“ opens.



In the field „*Contact number*“ record the number of the contact, using mouse clicks (or the keyboard) on the arrows. You can also record the number of the relevant feedback contact in the field „s88 module“. Under „Connection“ allocate the input number (1 to 16) at this feedback module: the correct number of the contact will be displayed in the field „Contact number”.

Point the mouse pointer to the track symbol to which you want to assign the contact number and press the left mouse button. The correct contact number is displayed at this place. You can place the number as often as required in the track diagram by pressing the left mouse button several times or by dragging it with the mouse pointer.

Six contact numbers are placed in our small example. At the train number symbol contact 1, the three line contacts 2 to 4, the braking contact 5 and at the right train number symbol the destination contact 6.

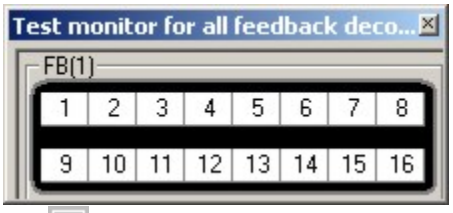
A block always consists of a minimum of three contacts:

- Start contact (C 1)
- Braking contact (C 5)
- and destination contact (C 6).

For an optimal control of your locomotive it is better to use further line contacts as shown above. This depends of course on your model railroad layout and the length of your block systems. For special routes you can even resign the braking contact.

Please always **observe** that the train number fields contain the contact numbers. This is very important, as it is needed for the correct train number display.

Click on **'*Delete*'** to erase a contact number and proceed analogy to recording of feedback numbers.



The correct indicator display for track occupation in the track symbols can only be checked, once you have left the track diagram editor and you are in the main program. As a replacement to check the correct functioning of a feedback contact, use s88 monitor (see **7.5.3**). Click in the menu bar on <Options> <Test monitor for all feedback decoders> or on the switch in the toolbar.

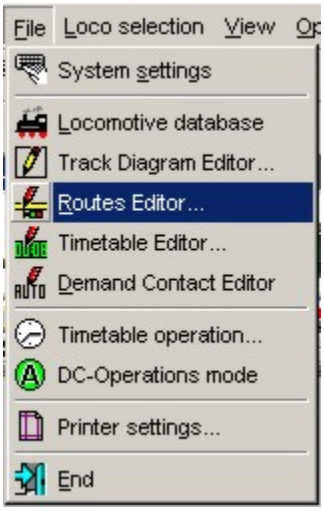
Finally click in the menu bar on <File> <Save> or on the switch in the toolbar and leave the track diagram editor.

In the main program you can now…

- control locomotives
- change both signals with a mouse click
- and observe track occupation.

Quick entrance – Fifth step: Routes Editor

Recording and switching routes



Next define a route for the drawn block.

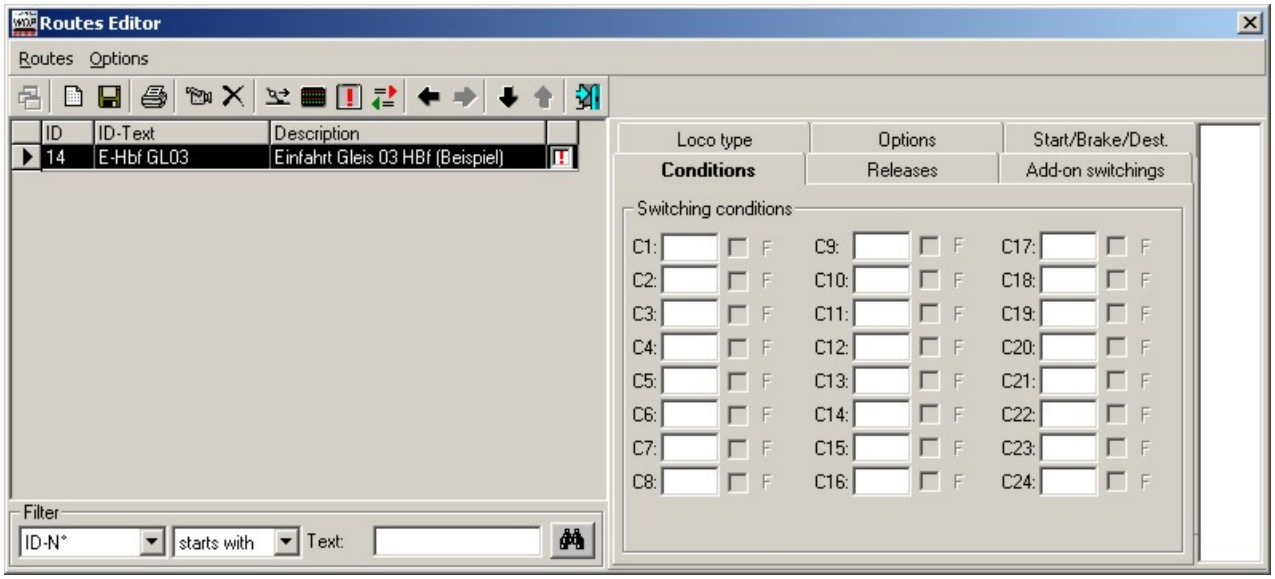
You can define an unlimited number of routes. You can define up to 40000 routes.

Click in the menu bar in the main program on <File> <Routes editor> or on the switch in the toolbar.

A window „Routes editor“ (chapter **8**) opens, containing six index cards. The index card ‘Routes’ contains an example entry.

Recording the route (see 8.4)

We want to use the default value to record our route of the block. The exclamation mark- to the right of the description- indicates that the route has not been recorded or it is not correct.



How we define new routes is described in the manual in **8.2**.

Click in the menu <Routes> <Record> or on the switch in the toolbar.

A small window „Record“, containing 6 symbols, opens. Their meaning is easily recognised as the symbols are under laid in yellow „Quick info’s “.

The footer contains the ID text (see **8.2**) of the route to be defined, here predefined by the example route.

Press the left mouse button -a pencil is attached to the mouse pointer- and create the route from the start train number symbol to the destination train number symbol.

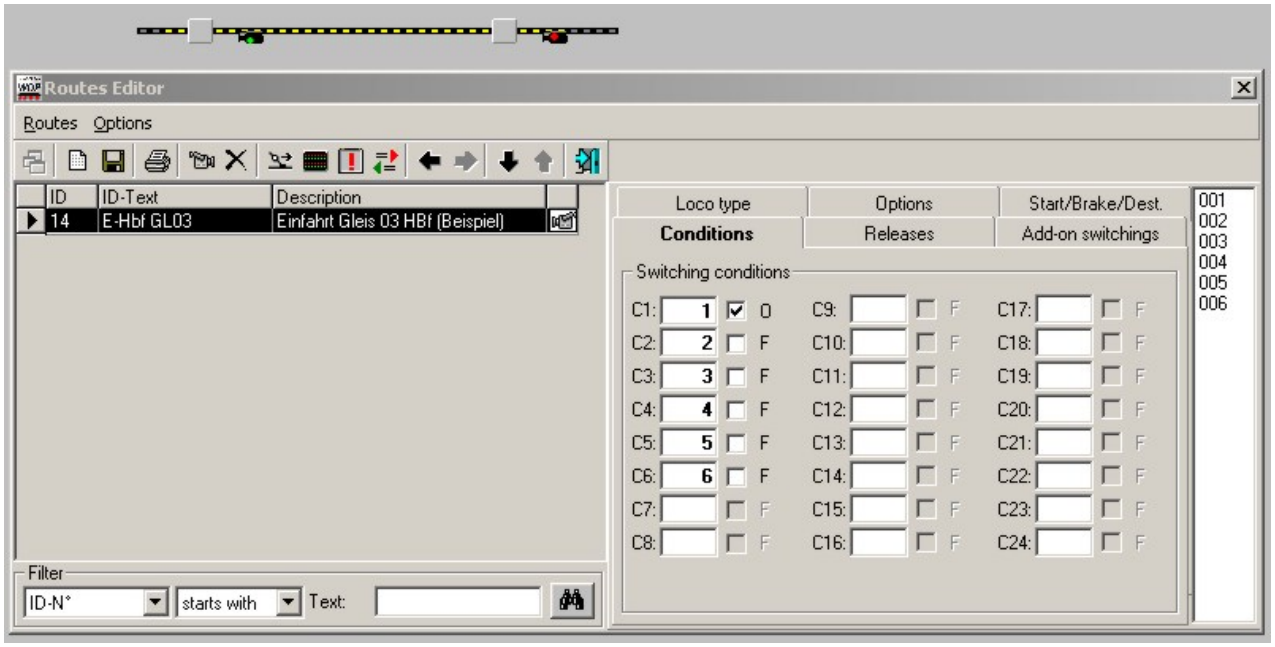
Move with the mouse pointer to all track symbols, one by one, which belong to that route, and press the left mouse button at each symbol. . You can also drag the mouse pointer with the left mouse button pressed. The itinerary will light up in yellow.

Click as often as necessary on the solenoid device symbol until the desired position has been reached. The left hand signal to GREEN, the right hand signal to RED.

With the right mouse button you can delete an itinerary or part of it: Click or drag.

If you are satisfied with the itinerary, click on 'Save' .

Now there appears the message shown in the picture and a question which you should answer with ***'Yes'*** if you have recorded the feedback contacts of the route **in precise order from the start to the destination**.



After clicking on **'Yes'** you should see the picture above. The exclamation mark is replaced by a small camera, indicating that the route has been recorded correctly.

TIP!
In the above example you can see that the route recording started one symbol before the left-hand train number symbol. The contact number 1 in the right list field would not have been displayed, had you started directly on the left signal.

Recommendation!
A route's recording always starts one 1 symbol **before the start train number symbol** and ends always **at the destination signal** or alternatively one symbol behind the destination train number symbol, if there is now signal present (dead-end station etc.).

Recording switching conditions (see 8.7.1)

After the recording of the route as described above, you see the routes editor with the index card „Conditions”. You have to enter the conditions for switching this route into the fields on this index card. If you have recorded the feedback contacts of the route **in precise order from the start to the destination** and answered the according question with **'*Yes***, thus **WIN-DIGIPET 9.0** has already registered the switching conditions in the fields C1 to C6 and the start contact 1 has been already checked.

The right list field shows automatically all feedback numbers of the recorded route.

If you selected **'*No*'** in the message box, then you have to enter the contacts by yourself and check the field right of the start contact.

For our route applies: **only switch**, if contacts...

- 1 = Occupied
- and 2 to 6 = Free.

Recording release conditions (see 8.7.2)

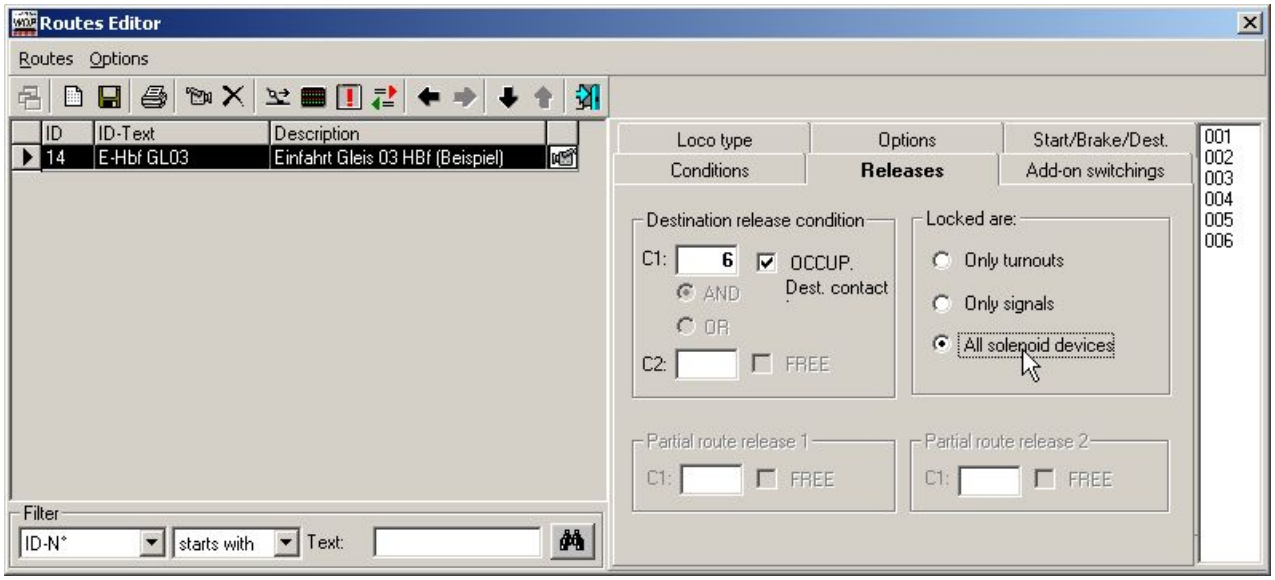
Next click on „Release“. Define the exceptions for locking and the conditions for the release on this index card.

If you have recorded the feedback contacts of the route **in precise order from the start to the destination** and answered the according question with **'*Yes***, thus **WIN-DIGIPET 9.0** has already registered the release condition on the according index card, otherwise you have to register the destination contact 6 by yourself.

In the field „Locked are“**,** you should select „*All solenoid devices*“ whenever possible to get a complete lock of the recorded route.

All solenoid devices in this route will be **locked**, as soon as the conditions are fulfilled and the route was switched. Another route, containing one or more solenoid devices of this route, can only be switched after the release conditions of the route have been met.

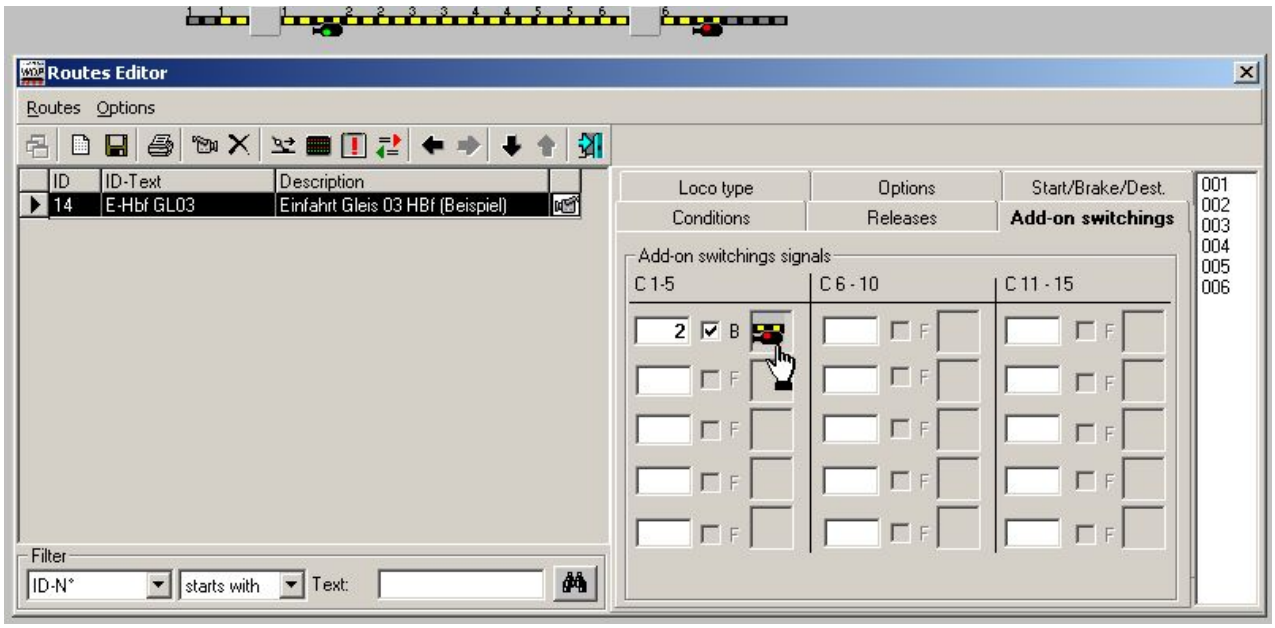
Routes are only automatically deleted from the screen if the release conditions were recorded.



The route in our example is released and deleted from the screen if contact **6** has been reached, e.g. contact **6 = Occupied**.

Recording add-on signal switching (see ***8.8***)

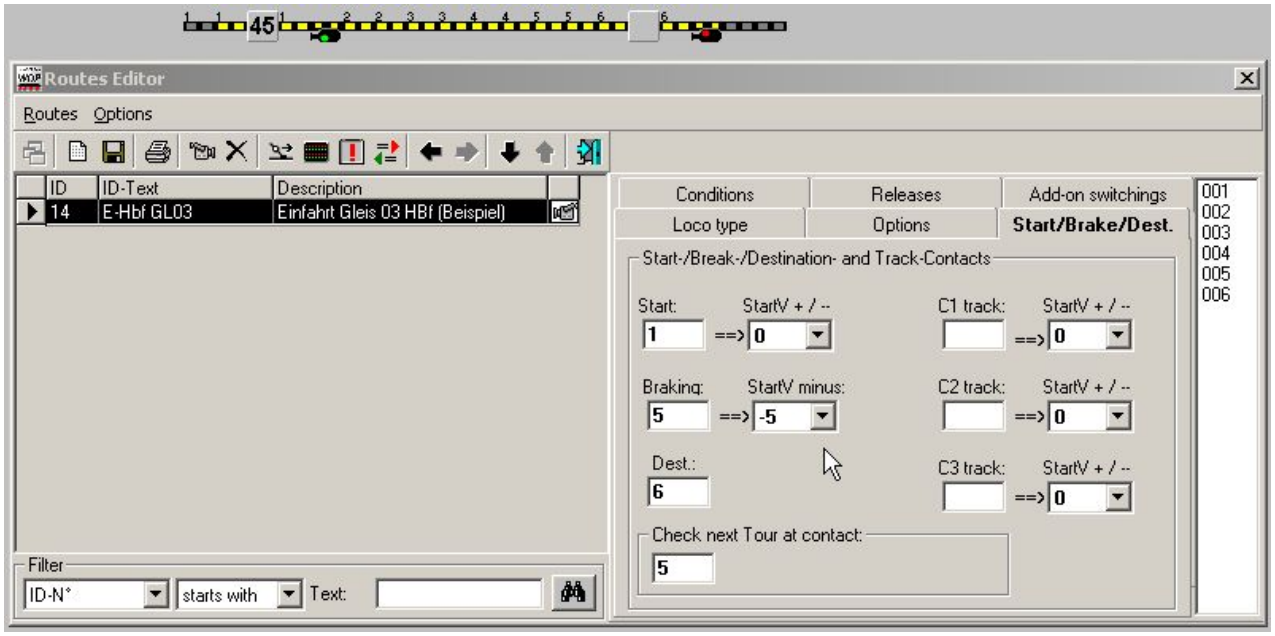
In **WIN-DIGIPET 9.0** an established route is capable to carry out add-on switching at solenoid devices (at signals, at simple turnouts and at three way turnouts, but **not** at crossings).



In our example: „Switch the left hands block signal to RED after the train has reached contact 2“.

Enter **2** into the field „*C1*“ and check the field alongside, the text „*F*“ changes to „*O*. Drag now with pushed left mouse button the left signal in the empty picture box beside **2** and drop there the icon. You select the signal aspect (here red) by accordingly many clicks on the symbol. Moreover you find further information **in section 8.8**.

Registering starting/breaking/destination contact (see 8.7.3)



If you answered the former confirmation request with ***,Yes'*** **WIN-DIGIPET 9.0 has** also registered all entries on this index card.

If not, you have to make the entries for „*Start*“, „*Braking*“ und „*Destination*“ as shown above.

All other fields on this index card aren't required for our quick entrance, they will be explained later. Save your entries with the symbol in the toolbar.

Testing the route(see 8.11.2)

With the possibility to test your route you can check the correct switching of both signals.

Therefore use the menu command <Options> <Test route> or click on the symbol in the toolbar.

Place your locomotive on contact **1** (according to the switching conditions this must be occupied) and click in the window „Test route“ on **'*Start*'**. The test of the route starts and the routes is executed.

Now place for testing purposes another loc on contact 3 and repeat the test. You should get the message showed at the right side:

„Route not switched!
C: 003 must be FREE!“.

Leave the routes editor by the menu command <Routes> <Close> or by clicking on the symbol in the toolbar.

You will return to the main program of **WIN-DIGIPET 9.0**.

Now you can execute the route in the main program also with the **start/destination-function** (see **18.5.1**).

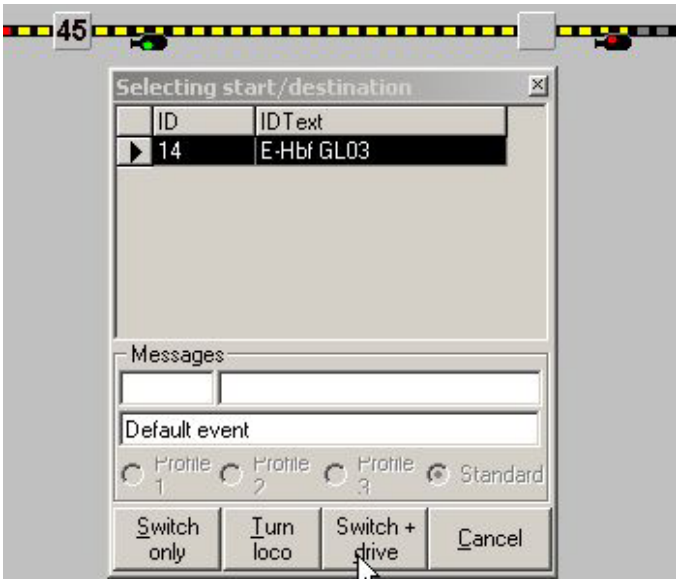
Therefore **WIN-DIGIPET 9.0** offers you two possibilities for testing the route as follows.

Testing the route with the simulation (see 8.11.1)

Transfer with pressed right mouse button a locomotive from the locomotive bar to the train number symbol left of the signal at contact 1.

You start **the simulation of WIN-DIGIPET 9.0** as follows:

Select the menu command <Options> <Simulation ON> or click on the symbol in the toolbar.



Immediately after the turning on of the simulation both contacts 1 are illuminated red beside the left train number symbol, the track is occupied and the first switching condition of the route is fulfilled.

Click now with the right mouse button once on the left train number symbol and again with the right mouse button on the right train number symbol.

The route blinks and the window „Selecting start /destination“ appears. There all routes which the system found in this area with their ID texts are displayed in a list under their internal ID numbers. In our example only one, our block system.

Click then on ***'Switch + drive'***, the route is switched and blinks no more and immediately the locomotive starts to run. You can trace this now very nicely on the monitor.

The signal is switched and the train can start...

...the signal is switched to red, the train number transferred, the train still drives...

... and now is at the destination and the route was released.

Testing the route „live“

Test then your first route "live" at your model railroad layout. Therefor please switch of the simulation.

Drag with pushed right mouse button a locomotive from the locomotive bar on the train number symbol beside the left signal at contact 1 and put the locomotive on the track at contact 1.

Click with the right mouse button once on the left train number symbol and again with the right mouse button on the right train number symbol.

The route blinks and it appears, like by the simulation, the window „ start / destination choice “. There the route with her ID text is displayed again under her internal ID No.

Now you have two possibilities:

1. Click on ***'Switch only'***. The route is switched and blinks no more, and you can drive the route by hand with a locomotive using a control panel.
2. Let the locomotive automatically drive (with train number display see **18.14**). Therefor click on ***'Switch + drive '***, so that the locomotive is controlled by **WIN-DIGIPET 9.0**.

If you have chosen „ *Direct jump from start to destination contact without contact interrogation* “ in the system settings, the train number will be directly transmitted to the train number symbol on the left beside the right signal, as soon as the route is switched. Otherwise the train number on the start train number symbol is blanked when the start contact is free, and on the destination train number symbol again made visible when the destination contact is reached.

Now, in addition, the locomotive will drive with the registered speed from the left to the right signal and stop there.

Your first test journey is now completed successfully and others can follow, have a lot of fun...

1 – PROGRAM CONCEPTS

WIN-DIGIPET is a modern, far-reaching, intelligent and very user-friendly software to control a model railroad, which is equipped with components of Märklin Digital, Uhlenbrock Intellibox, Lenz Digital Plus 2.0, 3.0 or 3.5 or something equal.

WIN-DIGIPET 9.0 (32 Bit) was developed for computers with one of the following operation systems: **Windows** 98SE / ME / NT SP6 / 2000 SP4 / XP SP1&2

The concept of **WIN-DIGIPET 9.0** is based on the reliable model railroad control software DIGIPET and WIN-DIGIPET 5.0/ 6.0 /7.x/8.x, which have been sold several thousand times all over the world.

Version **9.0** of **WIN-DIGIPET**- software offers an comprehensive and comfortable solution to control Digital layouts of any size:

1.1 Main characteristics of WIN-DIGIPET 9.0

- Easy data input and execution, even for computer novices. In case of errors, **WIN-DIGIPET 9.0** indicates incorrect data inputs immediately.
- The handling, the graphical and data input interfaces are very user-friendly and correspond to the current and most modern Windows standards.
- Toolbars and Pull-Down-Menus of **WIN-DIGIPET 9.0** are corresponding to the modern and up-to-date Office style. Customised toolbars are easy to create.
- **WIN-DIGIPET 9.0** allows to show and control even the largest model railroads. The WIN-DIGIPET 9.0 Track layout diagram is able to display up to 250 track symbol panels in width and 200 track symbols in height. This represents a complete expansion of 50.000 track symbol panels.
- Up to nine sections of the track layout can be stored separately and displayed immediately.
- The user enters all commands within the **WIN-DIGIPET 9.0** track layout and watch how they will be carried out. This enables you to control your model railroad very safely.
- Several model railroads can be registered completely (generic term: „**Projects**“), stored and reloaded. Besides this, projects may be printed or be saved to storage media to pass them to others.
- **WIN-DIGIPET 9.0** contains 628 individual symbols to create track diagrams, including right and left slanting points, signals, distant signals, decouplers, tunnel entries, bridges and a turntable.
- In addition**, WIN-DIGIPET 9.0** offers 11 different symbol tables for the individual configuration of the track diagram. You can choose between the bright standard background or the German Railways correspondent black background, with black or white text for your track diagram and you can easily change later any time between the different symbol tables. In addition**, WIN-DIGIPET 9.0** offers you for the first time the possibility to create **your own icons** for your model railroad layout.

- **WIN-DIGIPET 9.0** uses for its numerous functions the once registered data of the model railroad and connects them meaningful together. This saves the user complex- and time consuming operations.

- **Locomotives** in **WIN-DIGIPET 9.0**:
  - Controlled Locomotives are not only displayed with their data, but also always with **coloured illustrations**.
  - **375** locomotive illustrations are available to be used in the software. Beside this you may scan your own or import external illustrations from other databases.
  - On a model railroad, locomotives are controlled by several and different control units.
    1. with a quick command bar, which offers the possibility of controlling **10** locomotives at a time without using a loc control?
    2. with the **WIN-DIGIPET 9.0** loc controls („Maxi“, „Mini“ or „Micro“).
       - „Maxi“ (big loc control) with displays for target and actual speed, turning knob and function buttons
       - „Mini“ (small loc control) with displays for target and actual speed, slider and function buttons or
       - „Micro“ (locomotive monitor) only for the display of the locomotive and their functions like acceleration, braking, stopping etc.
    3. via Märklin Digital Control Units or via the Uhlenbrock Intellibox,
    4. via corresponding Lenz – Hand Controls or Roco Lokmaus2,
    5. via a Joystick.
  - Range of locomotive addresses: For Märklin-Digital-System 80; for Lenz-Digital-Plus 2.0 it is 99, in Version 3.0/3.5 it is 9999. For the Uhlenbrock Intellibox it is also 9999 addresses, depending on the used decoder type.
  - **Multitractions** of two or three locomotives can be arranged, controlled and released within seconds.
  - An hour meter for operations with maintenance interval and supervision display is assigned to each locomotive.
  - Automatic link of a **functions-decoder** to a Loco-Control.
  - Link of an individual, loco specific sound directly to a Loco-Control.
  - Up to **200 locomotives** (according to used model railroad system) can be directly controlled **in WIN-DIGIPET 9.0**. In the locomotive’s database you can register even more locomotives and if you configure them as *"In display case"*.

- Depending on the **Digital-System**, up to 256 (Märklin), 320 (Intellibox) and 1024 (Lenz) solenoid devices can be switched via mouse click or via an unlimited amount of **routes**.

- Very fast switching of routes via **Start-Destination-Function.**

- **Virtual Keyboard** for routes switching.

- Routes can be expanded at turnouts and signals with up to **15 Follow-On Switches** and locked („occupied“) with up to **24 switching conditions**. A warning will be given, if routes cross each other and occupied tracks are indicated.
- It is possible to release partial track sections of routes to increase operations on the model railroad livelier.
- Routes can...
  - can be allowed or prohibited for **special types of locomotives/trains**
  - can be allowed or prohibited for **special locomotives** and
  - with **up to 3 profiles per route and locomotive** individually adapted and so speed changes, switching solenoid devices or playing sounds at **any feedback contact** of the route.
- Automatic **check of all routes** after changes of the track diagram later on.
- Routes, solenoid devices settings and occupied tracks are indicated in colours within the track layout diagram of **WIN-DIGIPET 9.0**.
- **Display of train numbers**, each with a picture of the locomotive: On the screen, you have an overview of all train movements, even in hidden areas.
- **No sections without electricity** are necessary **before the signals** for the control of all trains **with WIN-DIGIPET 9.0.**
- **WIN-DIGIPET 9.0 – Timetable – System** for block control, fiddle yard control as well as fully automatic operations. Trains are precisely controlled by routes and time. Signals and isolated track sections (powerless tracks) become obsolete.
- **WIN-DIGIPET 9.0 Automatic with demand contacts** . With this automatic system the trains are not controlled by a timetable, but **WIN-DIGIPET 9.0** switches at any time the route which is now possible for the train. The so-called "aquarium effect" is given here with all its extends, especially if you use, in addition, still random generators.
- **WIN-DIGIPET 9.0 Tour automatic** for controlling the train by time as in the timetable operation or by demand contacts as in the automatic with demand contacts. With this automatic system the trains follow a schedule and you determine whether a train on a certain route or tour starts at an agreed time or completely confidentially. With the possibility to assign conditions, like solenoid devices, feedback contacts, train number colour, direction of the traffic or location of the locomotive etc., you can plan and define a very diverse automatic operation . Even chronologically repetitions reruns of routes and tours e.g. for a push-pull train operation are possible any time. And if you use, in addition, the random generators, almost everything is possible.
- **WIN-DIGIPET 9.0** also allows all together and at the same time (manual controlling of the trains, timetable and automatic operations).
- **Tracking-Windows (“Inspectors”)** within profiles, the timetable system, the automatic with demand contacts and the tour automatic to control and track all operations and order of events.
- **More than 350** railroad sounds and videos from the CDs can be activated by contacts or manually.

- **Automatic change of locomotives** within a timetable.
- **Initiating** an **emergency stop** via feedback-contact-key at any area of the model railroad.
- **Speed measures** in km/h for proper adjustment of driving and top speeds.
- Automatic **turnout- and signal-function-test.**
- **Control display** to monitor all feedback contacts.
- **DIP switch position** for all Märklin loco decoders and k83/k84 solenoid device decoders can be displayed.
- Programming and controlling of Märklin's **digital turntable** and Märklin's **moving table**. The devices can be directly controlled from the track diagram.
- Programming and controlling of Roco´s and Märklin´s/Trix´s **digital cranes**.
- **Multichannel sound** for a perfect sound atmosphere within profiles, the timetable system, the automatic with demand contacts and the tour automatic.
- Changes and supplements of track diagrams and routes can be done very quickly and every time.
- **Print functions** for documentation purposes of all data.
- **WIN-DIGIPET 9.0** helps you very comfortable with the backup and restoring of your whole model railroad data. You can use every kind of data medium – even network drives.
- **WIN-DIGIPET 9.0** supports **Uhlenbrock/Modeltreno INTELLIBOX** with the extended protocol, which does the following:
  - Transfer speeds (Baud rates) of **2.400 to 19.200 Baud;**
  - Use of all **widely used Loco Decoder types** like Märklin (old and new Motorola format), DCC (Lenz), Selectrix and Uhlenbrock on one single model railroad;
  - Very **fast track occupied messages** using event interrogation;
  - Status feedback of solenoid devices and locomotives by indicating it on the screen.
- **WIN-DIGIPET 9.0** supports Fleischmann TWIN-CENTER.
- **WIN-DIGIPET 9.0** supports the **HighSpeed-Interface** of Litfinski Datentechnik **(HSI-88)** for a faster read-back of the feedback contact modules.
- **WIN-DIGIPET 9.0** supports HELMO Train-Number-Identifying-System by transponder method.
- **WIN-DIGIPET 9.0** supports the connection of a **second** interface (Märklin) for switching of solenoid devices via a separate COM-Port.
- **WIN-DIGIPET 9.0** supports external track layout switchboards via feedback keys.
- **WIN-DIGIPET 9.0** supports the **Lenz Digital Plus System** with the following possibilities:
  - Transfer speed up to 115.200 Baud

- Controlling one analog locomotive (without decoder)
- Evaluation of 124 feedback modules (992 feedback contacts)
- Controlling of up to 1024 solenoid devices.

♦ **WIN-DIGIPET 9.0** supports the InfraCar-System for infrared control of model cars with digital decoders.

2 – HARDWARE, INTERFACES, CONNECTIONS

2.1 Hardware requirements for WIN-DIGIPET 9.0

Minimum:

Operating system:	Microsoft Windows 98SE / ME / NT SP6 / 2000 SP4 / XP SP1&2
CPU:	>300MHz
Memory:	> 128 MB (or least requirement of the used operating system)
Graphics card:	Resolution 1.024x768, True Colour
DVD/CD-ROM:	DVD/CD-ROM
Sound card:	(optional)
Hard disk:	> 50 MB free
Equipment:	Mouse, Keyboard (Joystick optional)
Internet Explorer:	IE > V 5.0
OPTIONAL:	DirectX: > V7 (optional if sound card used)
Soundcard:	100% DirectX 7.0 compatible (optional)

Recommended:

Operating system:	Microsoft Windows 98SE / ME / NT SP6 / 2000 SP4 / XP SP1&2
CPU:	> 500 MHz, plus 100MHz per 3-5 locomotives
Memory:	256 - 512MB (e.g. Win-XP)
Graphics card:	minimally 1.024x768 or higher, True Colour
DirectX:	> DirectX V7.0
DVD/CD-ROM:	DVD/CD-ROM
Sound card:	100% DirectX V7.0 (or higher)
Hard disk:	> 50 MB free
Equipment:	Mouse, Keyboard (Joystick optional)
Internet Explorer:	IE > V5.0

In Windows select ‘My computer‘ - ‘Control panel’ - ‘Display’ - ‘Settings’ and specify the following:

- Desktop area: **1024 x 768** Pixel (or more)
- Colour palette: True Colour 32 Bit
- Font size: Small Fonts - **Important!**

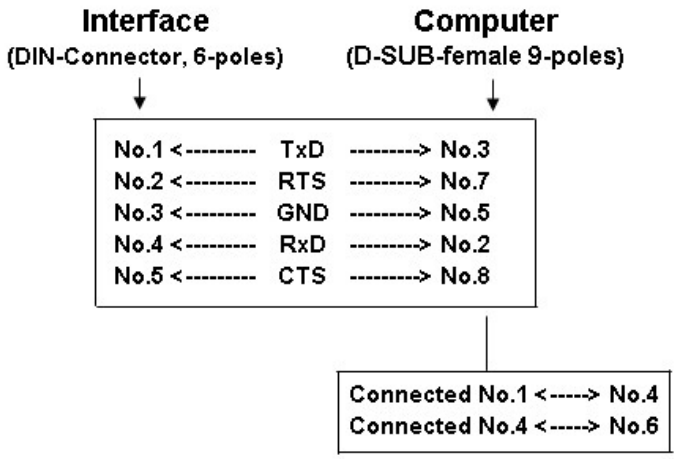
The setting "Large Fonts" distorts graphics. Test the correct setting „**Small Fonts**" using the turntable. Click on the symbol 'Turntable' (chapter **6**). Two shifted turntables indicate the wrong setting. Select **„Small Fonts"**.

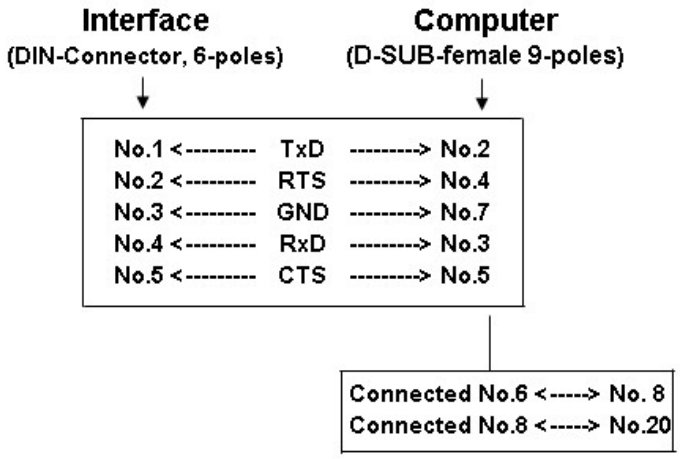
2.2 Interface connection- Märklin

The use of the interface cable shipped with your interface (Märklin-Interface 6050 or 6051) should be no problem, if your pc has a serial interface. It is possible, that you need a gender change adapter (female-female) when using the interface 6051, because the interface cable of the 6051 is shipped with male connectors on both sides.

When creating an interface cable between the interface and the PC by yourself, please take care of the different pinning of the cable.

The connector to the interface has to be a male and the connector to the serial port a female.
The cable from the Märklin-interface (reference no.6050/6051) to the computer has to be connected as follows:





The four micro switches on the rear of the Märklin interface are to be set as follows:

6051

No.1	ON
No.2	ON
No.3	OFF
No.4	OFF

The four micro switches on the rear of the Märklin-Central unit **6021** are to be set as follows, if the new locomotive decoders 60901 (new Motorola-format) are used:

6021

No.1	OFF
No.2	ON
No.3	OFF
No.4	OFF

Tip!
See also **2.3.1**.

2.3 Interface connection- Intellibox

The Intellibox has a serial computer interface.

A serial interface can be found on every IBM compatible PC or Laptop. This interface is also called COM port, modem interface, V.24 or RS232 interface.

A normal PC interface cable – used to connect a modem to the PC –or the Uhlenbrock-COM interface cable (Art. -No. 691) can be used.

Having a data transfer rate of max. **19200 baud**, the interface of the Intellibox is up to **8 times** faster than the Märklin-Interface. Additional speed is gained due to the input buffer and the extended commands.

The default value of the Intellibox interface is set for an IBM-compatible PC with a data transfer rate of 2400 baud and 6050-syntax.

Settings can be changed in **WIN-DIGIPET 9.0** under system settings (par. **4.1.3** and **4.18**) or in basic settings menu of the Intellibox under menu „ Interface“.

2.3.1 Interface connection of Märklin or Intellibox with USB port

You can connect your Interface with your PC or Laptop using a suitable USB-RS232-converter, if your PC/Laptop has no serial port.

2.4 Two-rail-DC-railroads

WIN-DIGIPET 9.0 supports not only the Märklin-HO-AC-System, but also the two-rail-DC-system.

The **feedback signals** of two-rail-DC-systems are very similar to the Märklin-H0-system: An analogue message from the track will be transferred to a feedback module s88. The s88 changes the signal from analogue to digital and sends it to the interface, which passes the signal to the computer. Corresponding feedback modules are available from Märklin (s88) and other manufacturers like Viessmann, Uhlenbrock, Litfinski, etc.

The generation of feedback signals of a two-rail-DC-system is different compared to the (quite simple) Märklin-H0-system: Two-rail-DC-systems requires always a “track-occupied-module”, available from several suppliers; please ask your vendor for details.

If feedback contacts or contact tracks are mentioned in this manual, then it always covers Märklin feedback contacts **and** DC “track-occupied-messages.

WIN-DIGIPET 9.0 supports the two-rail-DC-system as follows:

- **Lenz Digital Plus**
  All details are explained in the next chapter **2.5.**.
- **ROCO DIGITAL**
  uses the Lenz-System; whatever is mentioned about **WIN-DIGIPET 9.0** and Lenz in this manual, is also valid for ROCO-Digital.
- **FLEISCHMANN**
  - The Fleischmann-Twin-Center has got the same features like the Uhlenbrock Intellibox, except it does not use the Motorola format. Beside this restriction, everything what is mentioned about the Intellibox in this manual, is also valid for Fleischmann-Digital.

2.5 Lenz Digital Plus

WIN-DIGIPET 9.0 also supports Lenz-Digital-Plus versions 2.0, 3.0 and 3.5. With every program start (see **3.4. 3**), the Lenz-System will be initialised with these versions. Therefore **WIN-DIGIPET 9.0** demands the current status of all feedback contacts; if the Lenz-System is not ready, an error message appears.

In the system settings/Digital System you select your specific version under “connected Digital System” (see **4.1.1**). The number of feedback contact modules (FB-modules) will be blanked out. In **WIN-DIGIPET 9.0** this number is fixed to **124 Lenz-FB-modules** (not the theoretically possible 127), to ensure that the amount of all addressable feedback contacts does not exceed 3 digits. Therefore it is limited to **992 contacts** to be used in the program.

The features of the Lenz-System within **WIN-DIGIPET 9.0** are as follows:

Version 2.0

99 loco addresses (every address greater than 99 will be ignored and will be set to 0!) with 14, 27 and 28 different speed settings, special functions F1 to F4, 256 solenoid devices, 992 feedback contacts.

Version 3.0 (incl. Version 3.5)

9999 loco addresses with 14, 27, 28 and 128 different speed-settings, special functions F1 to F8, 1024 solenoid devices, 992 feedback contacts.

Version 3.0 transmits the special functions in three groups: F – F1 – F2 – F3 – F4 and F5 to F8, in addition also F9 to F12. **WIN-DIGIPET 9.0** supports group one and two, but does not support the third group (F9 to F12).

Please ensure that the function keys of group two (F5 to F8) are not activated in your locomotive database, if the decoders do not support this or if they are not used (because for each group, as several bytes need to be transmitted, therefore increasing the data stream too much).

Menu bar:

With the Lenz-System you can check the **status of all locomotives** and the **status of the control unit.**

Besides, you can click on the **COM-port-display** in the menu bar and initialise the Lenz-System and all feedback modules.

Please connect the old Lenz interface **Li 100** in terms of the Lenz manual. This interface just works with a transfer speed of **9600 Baud.** The newer Interface **Li100F** is able to work with a transfer speed of **19200 Baud.** The transmission speed has to be configured according to the Lenz documentation about the interfaces internal dip switches.

For the actual interface Li101F it is important to install the control software which is provided by Lenz before the use of **WIN-DIGIPET 9.0**. With this control software the transmission speed, the COM port and the Lenz machines address are configured. A transmission speed with up to 115,200 bauds is possible.

2.6 Roco Digital and Lenz Interface

WIN-DIGIPET 9.0 can also control the Roco Digital-System using the Lenz interface. This is an example configuration:

Lenz interface Li100F, Roco Digital 10761, Lokmaus 2 (red case).

You have to select Lenz Digital Plus 2.0 as digital system in **WIN-DIGIPET 9.0**. It could be necessary to change the device address of the Lenz Interface Li100F for using with the Roco Digital System.

You can find further information about this topic in the user-forum on the **WIN-DIGIPET Homepage.**

2.7 Internet -Homepage

If you have access to the Internet, you can click on the symbol in the menu bar or you can open your browser by using the Help-System to get direct access to the **WIN-Digipet-homepage. (www.windigipet.de).**
There, you will find news, updates or may leave your individual questions in the user forum.

2.8 Control by keyboard

Fundamentally you can enter all data inputs via the keyboard of your computer, but using the mouse is quicker.

In the graphical part of the program you can select all particular symbols by mouse only.

In a menu tray, you can get from panel to panel with the **tab-key** or **arrows-up** and **arrows-down** keys; with the shift-tab-key you can get back to the previous panel. Each active panel will be illuminated. A switch, e.g. “On/Off”, will be operated with the **space-key**.

Active windows in the main program or track diagram editor can be closed using the **ESC**-(Escape)-**Key**.

Within a window with scroll bars, you can scroll from line to line via the **arrows-up** and **arrows-down** keys. Also with a mouse you may temporarily scroll within a window with roll bars: If you click on the lower horizontal frame bar, it will move forwards, if you click on the top horizontal frame bar, it will move backwards.

The **PgUp**- and **PgDn keys** (page up and page down) will leaf through sidewise.

Even if you prefer to use the mouse you have to enter any text via the keyboard.

The control of the Loco-Controls(„Maxi“ or „Mini“) via keyboard see **5.14.4.**

With the key...

- **F1** you call the help function
- **F2** all Loco-controls get minimized and arranged at the top
- **F3** all Loco-controls get minimized
- **F4** all Loco-controls get closed
- **F5** you increase the zoom factor (Zoom +)
- **F6** you decrease the zoom factor (Zoom -)
- **F7** all active routes are deleted
- **F8** all locomotives can be stopped and started respectively
- **F9** you cause an emergency stop
- **F11** you can get from one open window to the next one
- **F12** the time table operation is stopped

3 – INSTALLATION AND START, HELP

3.1 General

Knowledge and operation of Windows operating systems is assumed with regards to this manual. Referring to „Windows“ includes Windows 98SE / ME / NT SP6 / 2000 SP4 / XP SP1&2 in this manual.

„Click“ and „Double click“ refer to the left mouse button; the „right mouse button“ action is underlined in the text.

In this manual...

- Menu commands are written as <File> <Save>.
- Button and selection fields written in „*Quotation marks*“ and italic.
- Commands buttons are surrounded by **‘*Apostrophes*’** and printed bold/italic.

If you read the word radio button, this means selections as this: ◉ Keine ○ Zuletzt gespeicherte Stellung ○ Grundstellung In these selection areas only one option can be selected at the same time.

3.2 Close all applications

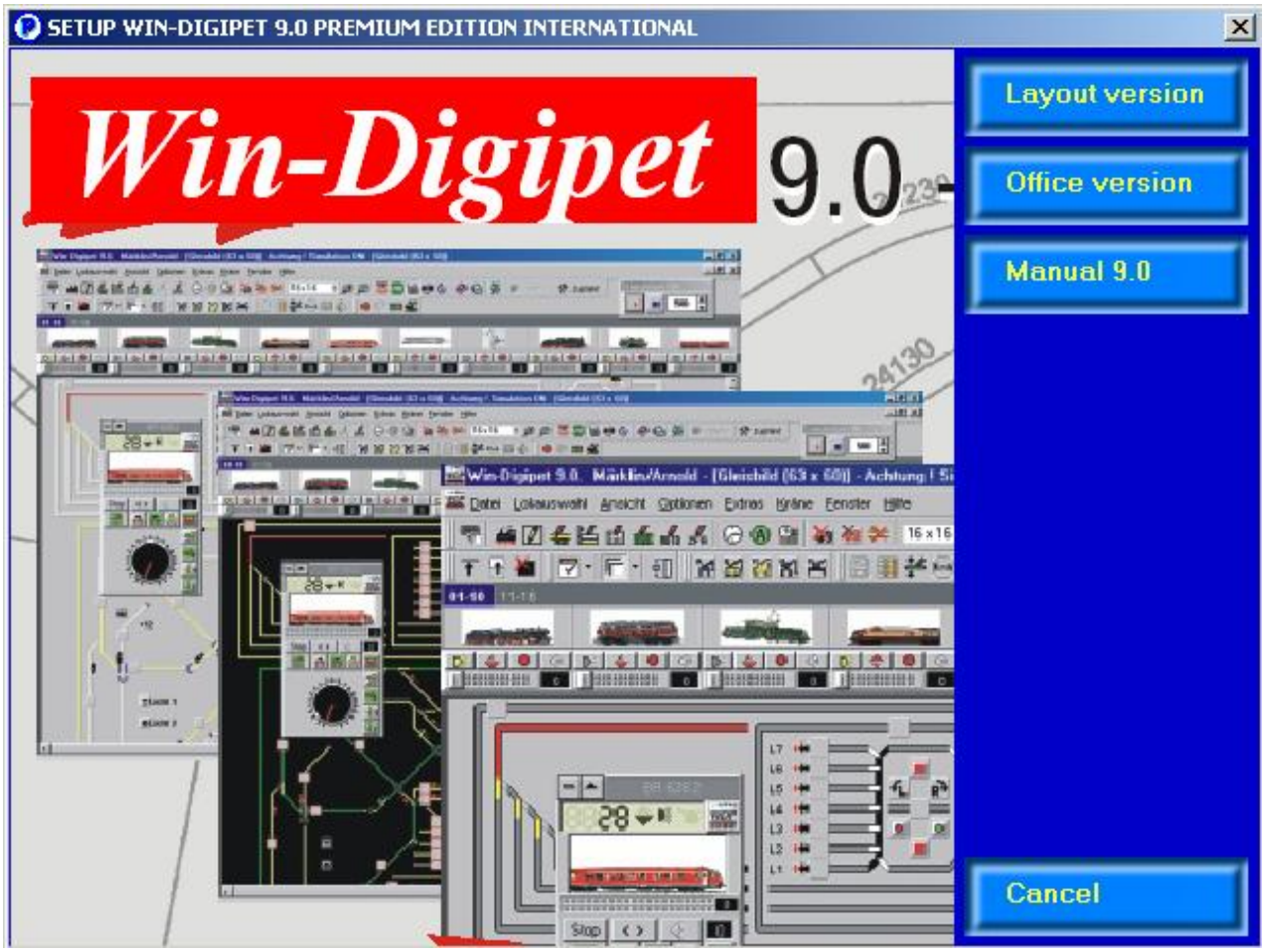
Before you install an update of **WIN-DIGIPET 9.0** please backup your project(s) and restart your Computer and Windows.

Close all open applications before installing **WIN-DIGIPET 9.0**. This also includes the Microsoft ® Office shortcut. It is advisable to delete all Microsoft ® Office programs from the auto start file.

3.3 Installation, switching-on sequence, update

Insert the CD-ROM, containing **WIN-DIGIPET 9.0** software in the CD-ROM drive.

In the task bar click ‘Start’ - ‘Run’. The window ‘Open‘ to the setup program appears. Default value is **A:** SETUP. Please change the drive letter to your CD-ROM drive, i.e. **D:\SETUP.** Confirm with ‘OK’.



The installation of **WIN-DIGIPET 9.0** starts with the picture above and you can select the installation by clicking on of the command buttons.

WIN-DIGIPET 9.0 uses for installation the **WINDOWS INSTALLER**. All copied files will be registered in a database. In case of a de-installation, all relevant and program related files will be deleted from your system. Due to this fact the amount of superfluous data files will be very little.

The “windows installer” needs to expand and prepare the installation routine, hence a minimum of **50 MB free disk space** on your **c:\-harddrive** is required. All files are expanded and copied to a temp directory. These files will be deleted automatically after the installation.

At the beginning of an installation, the Installshield installation routine will check, if the “windows installer” is available on your system; if not, this routine will be installed automatically.

A restart of your computer is eventually necessary. After restart the installation will proceed automatically. Normally you just have to click on **‘continue’** or **‘*OK*’**, then, the installation will proceed until completion.

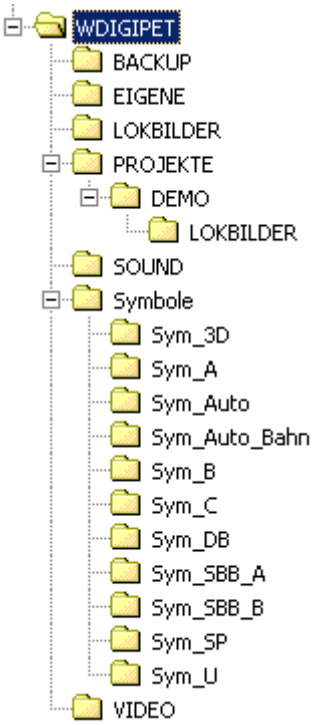
First installation: The default installation path for **WIN-DIGIPET 9.0** is **c:\wdigipet**. If you would like to change this, click on **‘*change*’** and overwrite the path c:\wdigipet in the window “select directory” with your favourite hard drive letter and directory name. Confirm with **‘*OK*’**.

3 – INSTALLATION AND START, HELP

If you already own a previous version of **WIN-DIGIPET 9.0**, you **have** to use the existing installation path- and directory where the existing WIN-DIGIPET-Version is installed. Already registered data will not be overwritten.

Existing databases for locomotives, routes, etc. will be **automatically** converted to the new version **WIN-DIGIPET 9.0**. Please confirm with '***OK***' or '***Start***' when prompted.

During the installation 21 sub directories are created (= folders):



- **WDIGIPET** — Main folder of **WIN-DIGIPET**
- **BACKUP** — This folder is used to save your data. The folder is empty after WIN-DIGIPET installation.
- **OWN Pictures** — Folder for own scanned locomotives
- **LOKBILDER** — Folder with pictures of locomotives of the current project
- **Projects** — Saved and non- active layouts (see **3.4.1**).
  - **DEMO** — Demo project
    - **LOKBILDER** — Folder with pictures of locomotives of the Demo project
- **SOUND** — Folder for all ***.WAV**- files (see **3.6**).
- **Symbole** — Folder for symbol tables (see **4.8.5**).
  - **Sym_3D** — 3D-Symbols
  - **Sym_A** — Screened symbols
  - **Sym_Auto** — Street symbols of model cars only
  - **Sym_Auto_Bahn** — Railroad and street symbols
  - **Sym_B** — Drawn through symbols
  - **Sym_C** — Symbols with signals in the centre of the track
  - **Sym_DB** — DB-Standard symbols
  - **Sym_SBB_A** — Screened symbols Switzerland
  - **Sym_SBB_B** — Drawn through symbols Switzerland
  - **Sym_SP** — Alternative- Symbols
  - **Sym_U** — User- Symbols
- **VIDEO** — Folder for all ***.AVI**- files (see **3.6**).

At the end of the installation program four symbols are created in you start menu and on your desktop.

- A symbol **„Data maintenance“**, allowing you to access maintenance, backup and restore data (see **3.5**)
- A symbol **“Track Layout Editor”** to get direct access to edit your track layout.
- A symbol **„Projects“**, an additional program to control created and non-active layouts in the folder „Projects“ (create, load and delete new projects).
- A symbol **„WIN-DIGIPET 9.0“**, as the program start-symbol

To remove WIN-DIGIPET 9.0, select ‘My Computer’ - ‘Control Panel’- ‘Add/Remove Programs’.

The “Windows Installer” also removes all system-files, which belong to WIN-DIGIPET and not to other programs.

Nevertheless, some files still will be available in your WIN-DIGIPET folder, which were created during the use of the program and have not been recognised by the “Windows Installer”. Eventually you have to delete those files on your own.

To delete your individual created projects completely from your system, you should delete those projects with the program part “PROJECTS” before you uninstall the software. This ensures that all entries in the windows-registry are removed.

Important notice!

At the end of the installation, you should reboot your computer, to ensure that all configuration files have been created or updated successfully.

If you start operating your model railroad – even if you just want to make some short tests – please **ALWAYS** start your **COMPUTER FIRST** and then your model railroad.

Remark for NT-Users!

For installation of **WIN-DIGIPET 9.0** you should be logged in as „administrator“!

Remark for WIN 98 Users!

Internet Explorer Version **5.0** or higher has to be installed on your system. If Internet Explorer 4.0 is installed on your computer, please install the newer version from the original **WIN-DIGIPET 9.0** CD-ROM **before** you install **WIN-DIGIPET 9.0**.

3.4 Creating several layouts („Projects“), program start

3.4.1 „Projects“

WIN-DIGIPET 9.0 not only offers you to create and comfortably control your own layout, but also a second, third, fourth, etc. They can be printed or copied to any data carrying media.

The second, third fourth, etc., could be a layout in its planning stage, a virtual layout which only appears on the display. Changes can be done on screen and then printed.

On the other hand, those „Projects“ could be real layouts from friends and family, i.e.: your son‘s layout, modules from the railroad club, etc. It is possible to produce a printout and copy the data to removable disk to use remotely in conjunction with WIN-DIGIPET 9.0.

All **real and virtual** model railroad layouts, including your own, are called **„Projects“**

3.4.2 Program start with/without Original CD-ROM

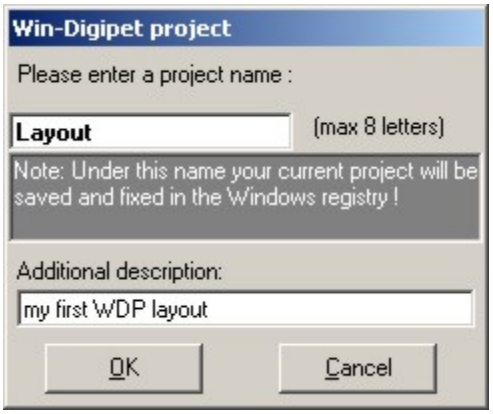
By the first program start **the Original WIN-DIGIPET 9.0 CD-ROM** must inserted in the drive, later it is demanded of the program automatically every few days.

If you want to do edit your data on the second computer (e . g. in the living room or office) and transmit it afterwards to your model railroad-computer, install on this computer the special **"Office" version of WIN-DIGIPET 9.0**. The Original Authentic **WIN-DIGIPET 9.0** CD-ROM is not necessary for this version, it launches **WIN-DIGIPET 9.0**, but without connection to your model railroad layout.

3.4.3 Program start – Only one project created

Activating the program for the first time, click on <Start> in the task bar, followed by <Programs> <Win-Digipet 9.0> <Win-Digipet 9.0> (see **3.3**) or click on the symbol 

on your desktop.



A window „Win-Digipet-Projects“ opens.

Insert the project name, max. 8 characters. The name can be fictitious. A description of not more than 50 character length must follow.

This is **only necessary once**: When data is created for the first time.

Click on **'*OK*'**. **WIN-DIGIPET 9.0** with an empty track layout appears. Input all your data, starting with system settings (see chapter **4**).
At further program starts click on <Start> in the task bar, followed by <Programs> <Win-Digipet 9.0> <Win-Digipet 9.0> or click on the symbol 

on your desktop. Then **WIN-DIGIPET 9.0** starts directly.

3.4.4 Program start - Multiple Projects

Only one of the multiple projects can be displayed on the screen (main program), all others are stored in a folder. The program 'Projects' and your command can access them before the start of **WIN-DIGIPET 9.0**.

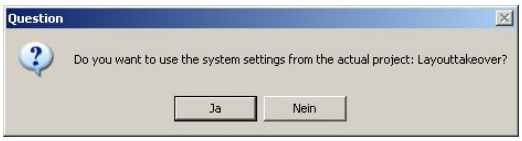
Assuming that you have created your own layout as the **first** Project and saved it. Now you want to create a further layout, your **second** Project.

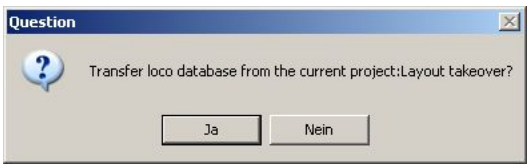
Close WIN-DIGIPET 9.0 and access **'Projects'**, click on <Start> in the task bar, followed by <Programs> <Win-Digipet 9.0> <Projects> – and **not** <Win-Digipet 9.0> or the corresponding symbol on the desktop. This will access the program „Projects“ showing all files of your **first** project.

Click on **'New project'**. The selection window „Win-Digipet Project" appears again; insert the name and description of the second Project.

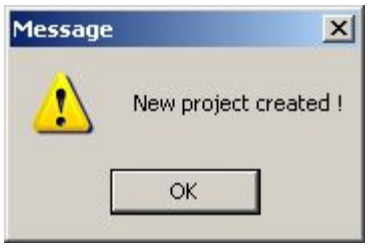
You can answer the questions, if you want to transfer your system settings or your locomotive database (see chapter **5**) with **'Yes'** or **'*No*'**.

This depends of course of your needs and track layout.





The message „New Project created" appears.



After a click on **'*OK*'** the WIN-DIGIPET-Project window closes...

...and **WIN-DIGIPET 9.0** starts automatically.

An empty track diagram appears to input the data for the second Project. The same applies for the third, fourth, etc., Projects.

During installation of **WIN-DIGIPET 9.0**, a **project** named "**DEMO** will be copied automatically into the folder "\PROJECTS\DEMO" on your hard drive.

If you would like to have a look at the Demo-data, please load the Demo-Project via <Start> in the task bar, followed by <Programs> <Win-Digipet 9.0> <Projects>.

Once loaded, you will find a small and clearly arranged track layout with all data, which was taken over from a seminar of the program author. Play around with this data to familiarise yourself with **WIN-DIGIPET 9.0**. If you want to return to your own project, use the same method as described in loading the "DEMO-Project".

To access another Project in the Project folder from the presently displayed Project, close **WIN-DIGIPET 9.0** and activate it as described above. The currently displayed Project is saved in the folder „Projects" and the window „Win-Digipet Projects" appears.

Highlight the Project in „Project-Selection" to make this the current Project. Click on **'Load Project',** to transfer it to the Win-Digipet-directory.

All data is displayed after WIN-DIGIPET 9.0 has been automatically restarted.

Tip!
When using more than one project you should activate „*Automatic save of data after end of program*" on the index card „Program settings – Backup data" in your system settings (see **4.13**).

The name of the active Project is displayed in the track diagram of the main program in the right hand side of the toolbar Anlage.

A click on this symbol starts the program for printing your settings (see **18.13.14**).

3.4.5 Deleting a project

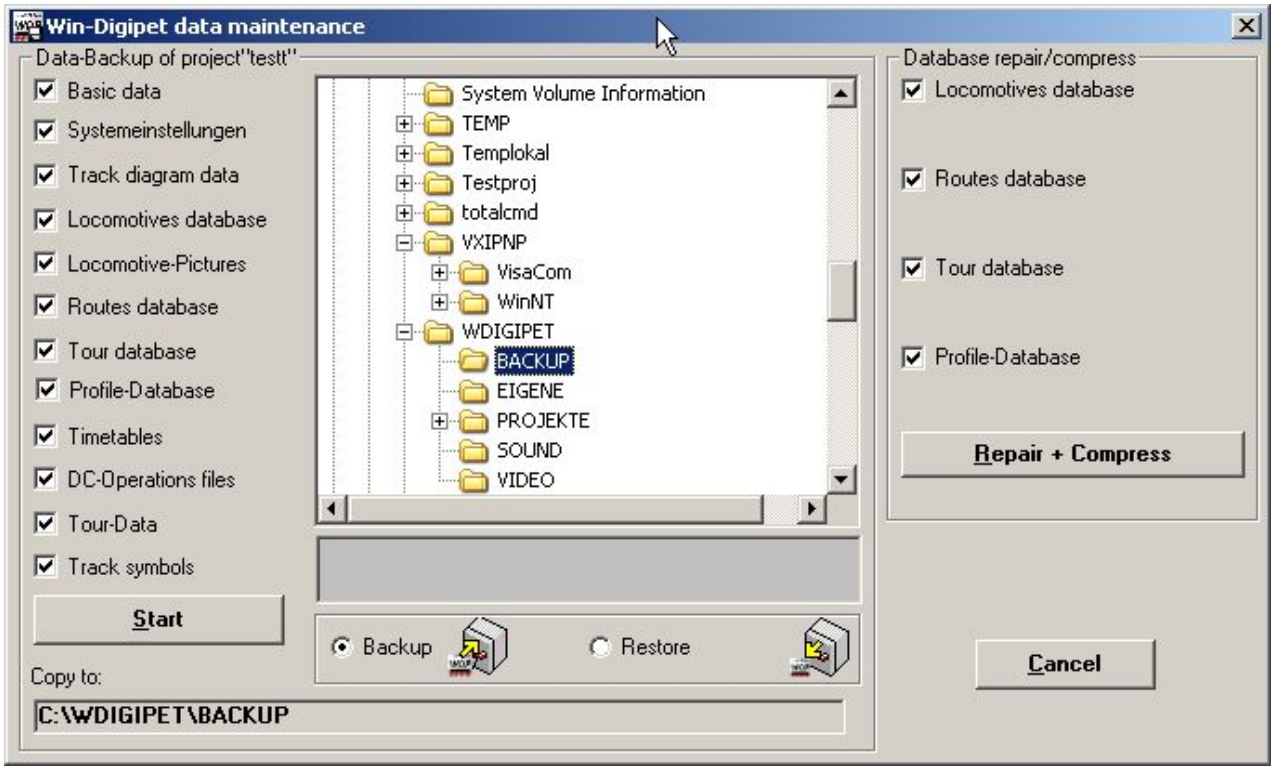
If you want to delete a project close **WIN-DIGIPET 9.0** and start the program „Projects“.

‘***Delete project***’ deletes a Project marked in ‘Project Selection’ on your Hard disk.

All projects can be deleted **except** the actual project!

3.5 Data maintenance

The program „Data maintenance “ can be started by a double-clock on „Data maintenance“ on your desktop or via <Start> <Program> <WIN-DIGIPET 9.0> <Data maintenance>.



With this program you can backup and restore your data and also repair and compress the databases.

But be careful, only your current project will be backuped.

If you want to backup your data without this program you have to copy all files with the following extensions:

***.AKK - *.DAT - *.FPL - *.MDB - *.TB - *.ZFA**.

3.5.1 Folders for the data

With this description it is assumed from the fact that you have installed **WIN-DIGIPET 9.0** in the standard directory (C:\WDIGIPET) on your hard disk. If you have installed the program in another directory, you must replace the dots (...) in the following directory specifications accordingly.

The data of the current project can be found..

- In the main directory of **WIN-DIGIPET 9.0** and the
- Pictures of the locomotives in the subfolder ...\LOKBILDER.

Every time you **change the project**, the data is stored and the new data is loaded.

WIN-DIGIPET 9.0 proceeds as follows...

- **Saving data** (the current project is Kreuzeck)
  - Moving the current project's data with the extensions *.AKK, *.DAT, *.FPL, *.MDB, *.TB and *.ZFA in the existing or new project folder (...\PROJEKTE\Kreuzeck).
  - Moving the current locomotive pictures in the existing or new subfolder (...\PROJEKTE\Kreuzeck\LOKBILDER) in the project's directory.
- **Load new data** (for example the project Anlage)
  - Copying of all data from the project directory (...\PROJEKTE\Anlage) in the main directory of **WIN-DIGIPET 9.0**.
  - Copying}of all locomotive pictures from the subdirectory of the existing project (...\PROJEKTE\Anlage\LOKBILDER) in the directory ...\LOKBILDER.

3.5.2 Data backup

After the start of the "data maintenance" you select in the left part of the window with a mouse click the data that you would like to backup. In the most cases you can use the preselection of the program. The radio button box should be set to *"Backup"*.

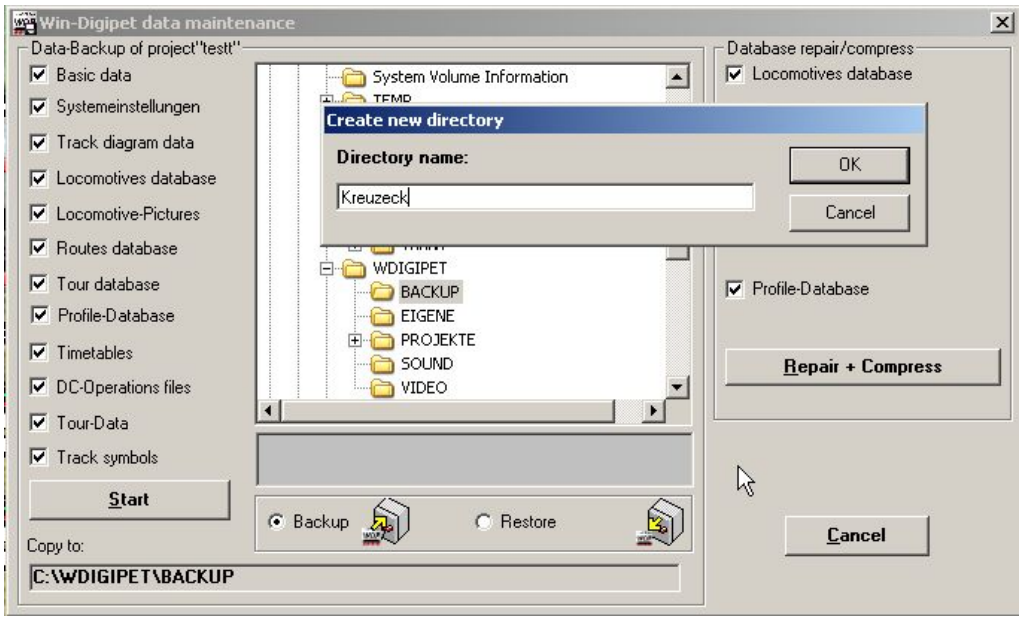
Not only the project data files are backuped, in addition also the system settings and all icon files are backuped.

Select the destination directory - C:\WDIGIPET\BACKUP (see **3.3**) is the preselected directory- and if you confirm with ***'Start'***.

If you want to backup to another directory , select in the same way as in the Windows Explorer the desired directory in the middle of the window.

If you want to create new subfolders in an existing directory press the <u>right mouse button</u>.

Select <Create new directory > in the context menu.



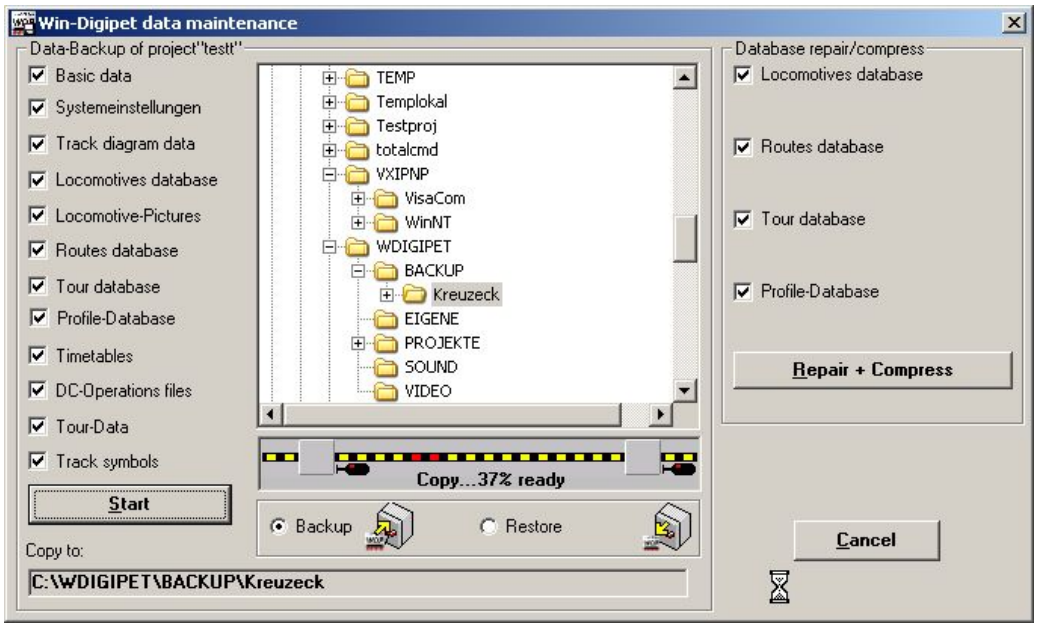
Now you can enter the name of the new directory in the window „Create new directory“.

Confirm the new directory name with ***'OK'***.

The new directory will be created and after a mouse movement the new directory is selected in the choice window. Now the complete directory path is displayed in the "Copy to:" frame.

The data will always the saved to the directory indicated in the „Copy to:“ frame, please insure that you have selected a desired destination.

After selecting the destination directory and setting the radio button to „Backup“ you can start the backup by clicking on ***'Start'***.



A progress bar informs you about the progress of the backup process.

Because of the amount of data you should use only storage media with sufficient space (DVD-ROM, CD-ROM, hard disk, USB memory sticks or Zip drives). You can also select network drives if available.

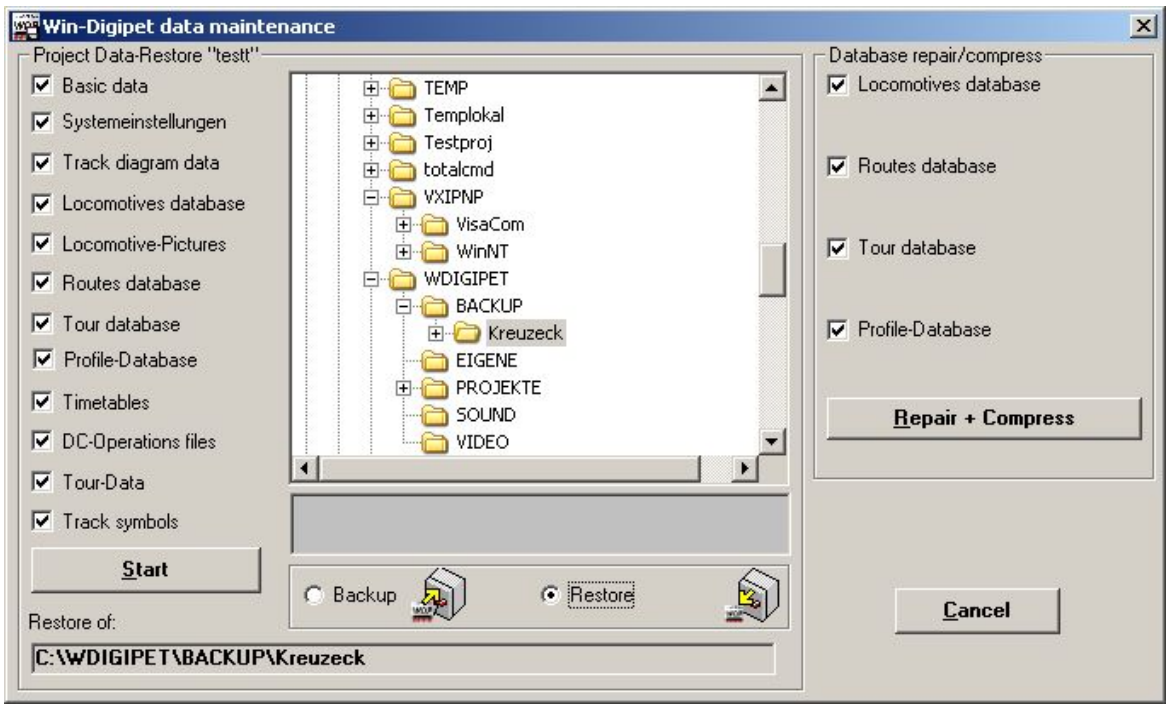
WIN-DIGIPET 9.0 stores your last destination directory and tries to select this directory the next time you start the program.

3.5.3 Data restore

You can use the „data maintenance“ program also to restore your backuped data.

In the folder selection window in the middle you can select the desired directory similar to the Windows Explorer. This can be any directory with project data or your former backup directory. You select also an archive backup directory according to **4.13**.

Be careful!
While restoring the current data of the project could be overwritten. Because of this the program creates a warning message.



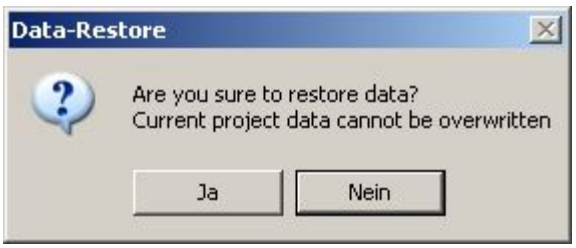
After selecting the directory select the kind of data to restore in the left part of the window.

By default all data are selected.

Set the radio button frame to „*Restore*“.

The data will always the restored from the directory indicated in the „Copy to:“ frame, please insure that you have selected a desired Source.

After selecting the source directory and setting the radio button to „Restore“ you can start the restore by clicking on ***'Start'***.



After answering the confirmation request with ***'Yes'*** the restore starts. A progress bar informs you also about the progress of the restore process.

You can restore not only the data of the current project. It is also possible e.g. to copy the track diagram and/or the locomotive database with the locomotive pictures of another project into the current project if this project was constructed just **new**.

But be careful!

If you restore your locomotive database, you should always restore the locomotive pictures also. Otherwise no or wrong locomotives picture would be displayed.

Important!
When restoring data you should take care about the following:

- The destination directory for the restoring process is set by **WIN-DIGIPET 9.0** automatically.
- When selecting the source directory you may never select the sub directories...
  1. \LOKBILDER
  2. \SYMBOLE or subfolders of this.

  WIN-DIGIPET 9.0 would this display an error message in this case.
- When selecting the basic data the actual projects data (e. g. Kreuzeck) will be overwritten and the project gets the project's name of the restored data (e. g. Anlage). This could damage the whole project.

3.5.4 Repair and compress the databases

By "repairing" the database you can fix errors in the database, if you have trouble with one of the databases.

By "compressing" a database all data records deleted during working with **WIN-DIGIPET 9.0** are finally removed.

- Deleted data records are only earmarked as "deleted", but are still internally stored, the size of the database doesn't change.
- This data records are not deleted until the database is compressed.

By clicking on '***Repair & Compress***' the databases get repaired and compressed.

After a short time the message „Databases have been repaired and compressed successful!" should be displayed.

3.6 Wave and avi files

WIN-DIGIPET 9.0 gives you the possibility to arrange the model railroad operation also acoustically according to the big railroad, in addition even video-sequences can be displayed.

As a requirement for this the installation routine creates in the installation directory which you selected the subdirectories \SOUND and \VIDEO.

- **SOUND** - All ***.WAV-**files have to be in this directory. Some have been copied there by the installation routine. Additional sound files from the CD-ROM or self-created WAV files **must be copied** in this directory if you like to use them in the Locomotives database and in the timetable system. You can copy sound files for the automatic with demand contacts and the tour automatic also in subdirectories of \SOUND.
- **VIDEO** - All ***.AVI-**files have to be in this directory. Additional video files from the CD-ROM or self-created WAV files **must be copied** in this directory.

WIN-DIGIPET 9.0 provides **more than 350** Wave files and some AVI files.

3.6.1 Railroad sounds and video-sequences

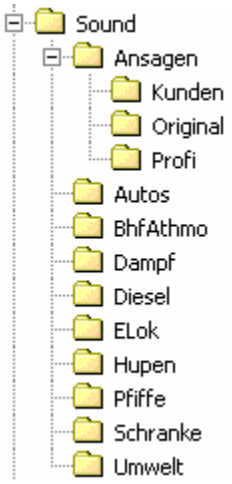
The **WIN-DIGIPET 9.0** CD-ROM also contains **more than 100** WAVE files and some AVI files.

At first we'll have a look at **the WAVE files**; they can be used easily **in the WIN-DIGIPET 9.0** timetable system.

In Your PC system you need only a sound card and a simple speaker.

You have to the following.

Put the CD-ROM in your drive (z . g. "E :"), you go to Windows Explorer, you double-click on E: and then on the directory "Sound".



In the directories you find a big choice of different sound files. You can use them very well for your operations.

The sounds can be integrated e.g. in the manual controlling using the start/destination function or also in the timetable operations, the profiles, the automatic with demand contacts or the tour automatic. In the according sections of this manual you will get to know even more about that.

Click on one of these subdirectories, then all files with the name extension ".WAV" appear in the right window. By a double click on one of these files you can listen to this and choose the file you want to use.

You copy a desired WAVE file about the menu command <Edit> <Copy> **in the subdirectory** C:\WDIGIPET\SOUND of your installation-directory C:\WDIGIPET (see **3.3**) or in the according subdirectory of your differently named installation directory.

The program searches and finds the chosen WAVE file only in this subdirectory, the only exceptions are the automatic with demand contacts which also accepts sounds in subdirectories from \SOUND and the tour schedule automatic can even use sounds in every directory of your hard disk.

You can use the chosen WAVE files by registering suitable commands in the contact events (see **11.2.2**).

The requirements for using **AVI files** - video-sequences - are in the timetable company and with the profiles the same as for Wave files. In addition, you need for playing AVI files the software „ Video for Windows " or "Media Player" of Microsoft®.

Video-files have the name extension ".AVI". You copy a desired video-file using <Edit> <Copy> **in the subdirectory** C:\WDIGIPET\VIDEO of your installation-directory C:\WDIGIPET (see **3.3**) or in the according subdirectory of your differently named installation directory.

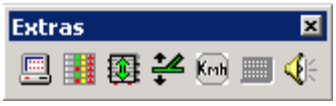
The program searches and finds the chosen AVI file only in this subdirectory.

3.7 Change toolbars in the main program

Definition:
A toolbar is "docked" if it is placed at one of the edges of the application window and has on the left two vertical bars, it is not docked „ “ if the toolbar "floats" as a freely movable window over the application window.

You convert a docked toolbar into a not docked toolbar as follows:

- Position the mouse pointer at the outer left border of a toolbar (two vertical bars).
- Drag the toolbar from the docked position to the desired position.



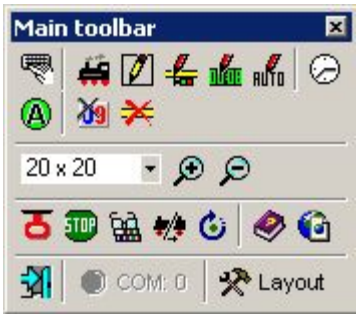
Tip!
If you double-click on the title bar of a not docked toolbar, it returns to the position, where it was docked last.

You shift a not docked toolbar as follows:

- Position the mouse pointer on the title bar of the toolbar window.
- Drag the toolbar window to the desired position. If you drag the icons window to a border of the application window, it is docked there automatically as a toolbar.

Thus you change a toolbar's size:

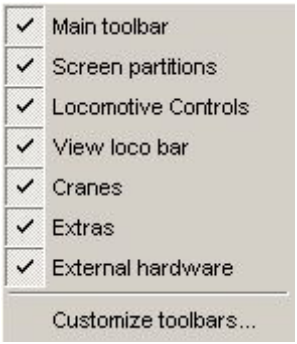
- To change the size of a not docked toolbar, drag in any edge of the toolbar.



Tip!
You cannot change the size of a docked toolbar.

Thus you make toolbars (in-)visible:

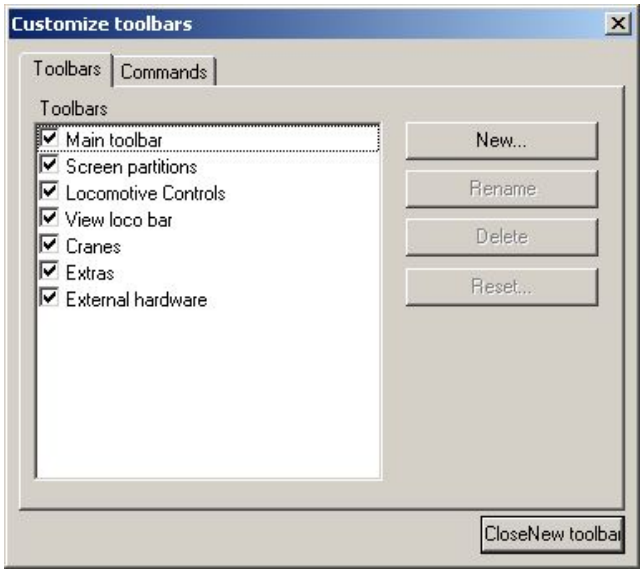
- Click within the menu bar or toolbar with the <u>right mouse button</u>.
- Uncheck the toolbars which should be hidden.



Tip!
Every toolbar you set visible again is displayed either at its normal position or the position, where it was moved last.

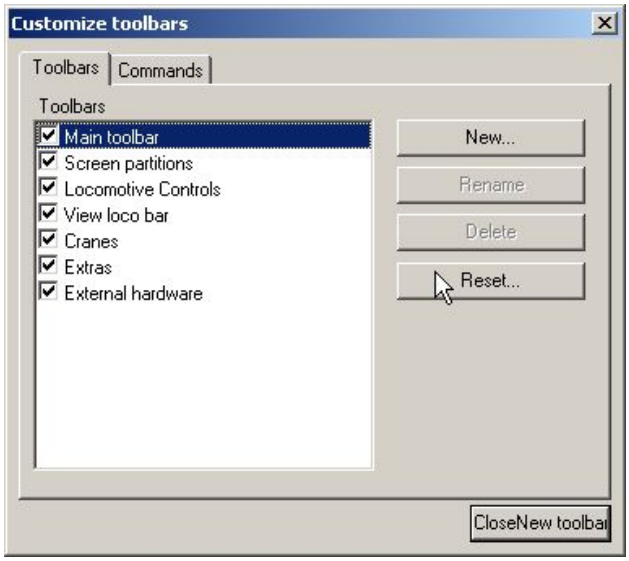
Thus you can customise toolbars individually:

You can customise toolbars by removing not required icons by dragging with the mouse or adding a new icon or a new command.



- Click within the menu bar or toolbar with the right mouse button.
- Click on ***'Customize toolbars'***. A new window appears.
- Click on the tab "Commands".
- Drag the icon, which you want to remove, out of a toolbar with the mouse or
- Drag from the tab "Commands" another icon in the toolbar which you would like to add.

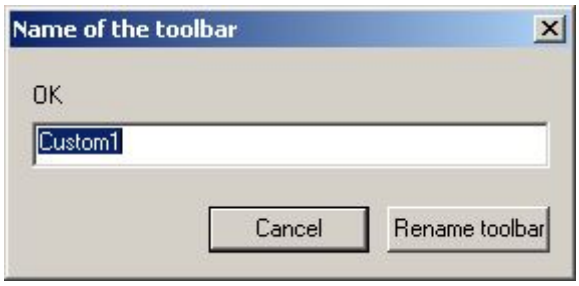
Thus you reset the toolbar:



- Select a toolbar on the tab "Toolbars".
- The button ***'Reset '*** is activated.
- Click on ***'Reset'***.

Tip!
All toolbars are reseted always and also the user-defined toolbar is deleted.

Thus you create a user-defined toolbar:



- Click on the tab "Toolbars" on ***'New'***.
- Assign a name for this toolbar and click on ***'OK'***.
- Drag from the tab "Commands" the desired icons in the new toolbar.

Tip!
Only the user-defined toolbars can be deleted or renamed.

When leaving **WIN-DIGIPET 9.0** all toolbars with their position, size and the dock state are saved.

Tip!
If the icons are not displayed properly any more, you should quit **WIN-DIGIPET 9.0**. Afterwards you delete **in the WIN-DIGIPET 9.0** main directory of your hard disk the file USERLAYOUT90. TB and launch **WIN-DIGIPET 9.0** again, the standard toolbar from the file DEFAULT90. TB will be displayed.

Because of this **the file DEFAULT90.TB may never be deleted**!

Be careful!
Your user-defined toolbars are also deleted by this action!

3.8 Help-functions

Execute all steps provided in chapters **4 - 18** of this manual.

These are logical steps, giving you guidance on how to best use all control functions of **WIN-DIGIPET 9.0** to control the model railroad layout.

<Help> in the menu bar can access additional information needed for a particular program part.

The **F1** function key displays the help function of the presently used window

3.9 Info-Lines

Additional help for **WIN-DIGIPET 9.0** is under the following numbers available:

Telephone:	**+49 172-2011009** - Mondays between 20.00-22.00 o‘clock
Fax:	+**49 2233-943923**
Internet e-mail:	**ppeterlin@netcologne.de**
Internet Homepage:	**http://www.win-digipet.de** (see **2.7**)

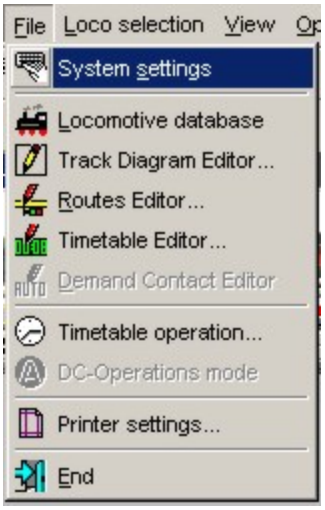
The homepage contains (when necessary) bug fixes for download, seminar dates, a customer forum and program updates.

4 – SYSTEM SETTINGS

After you have installed **WIN-DIGIPET 9.0** and have made already your first experiences with the program, you should get to know the functions **of WIN-DIGIPET 9.0** in all details within the following chapters.

In this program part how **WIN-DIGIPET 9.0** should react to inputs etc..

After you have launched **WIN-DIGIPET 9.0**, all program parts are loaded, and you are in the main part. In the upper port of the monitor **the WIN-DIGIPET 9.0** toolbars with the most important icons appear for opening different program parts.



The mean of each icon is displayed as tool tip if you point on the icon with your mouse. The icons of these toolbars - and all the other toolbars of the program - explain themselves, therefore, not all meanings are especially explained in this manual.

If you haven't registered any data until now, **an empty** track diagram appears on the monitor after start of the program.

Click on the menu command <File> <System settings> or on the symbol in the toolbar.

A new window "System settings" appears.

Tip!
You do not need to confirm every tab in the system settings with ***'Save'***.

Only after all your inputs, you have to save with ***'Save'***. Accordingly you leave the system settings with a click on the button ***'Close'***.

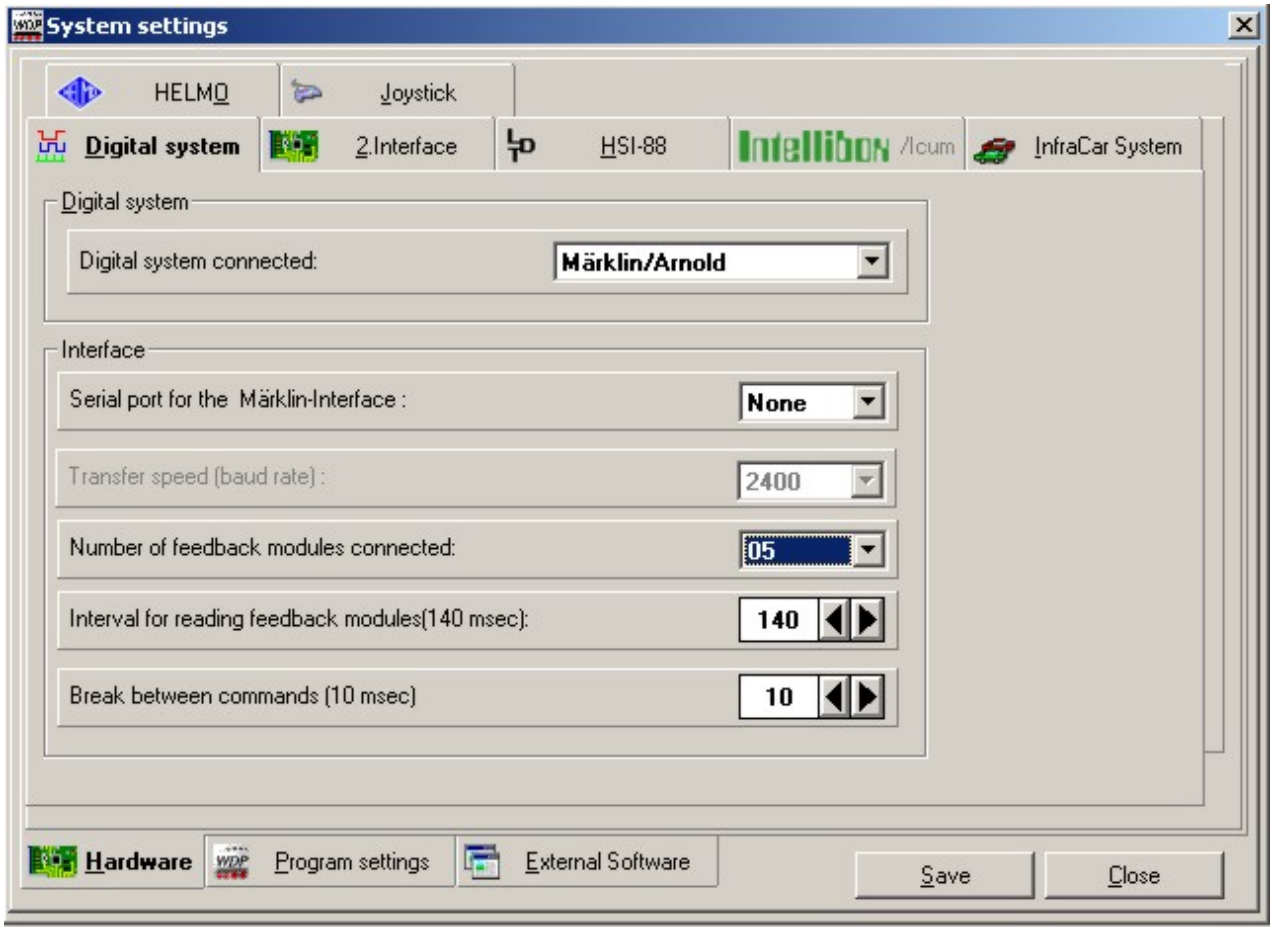
<u>Important tip!</u>
If you miss in the picture above the ...

- Tour planner
- Profiles editor
- Train scheduler and
- Train scheduler automatic

..., these are displayed not until the profiles (see **4.14**) and the tours (see **4.15**) are activated.

4 – SYSTEM SETTINGS

4.1 Index card „Hardware – Digital system“

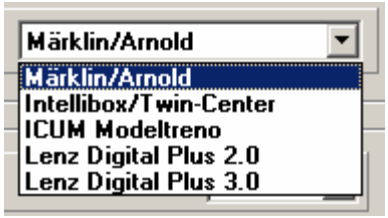


On this index card you can configure your digital system.

4.1.1 Digital system connected

Possible digital systems are...

- The Märklin Central Units 6020/6021 with the interface 6050/ 6051
- the Uhlenbrock-INTELLIBOX
- the Fleischmann TWIN-CENTER (identical in construction to the INTELLIBOX, but without Motorola and Selectrix protocol)
- the ICUM (an ISA-bus-card of Modeltreno, Bologna)
- Lenz Digital Plus version 2.0 and
- Lenz Digital Plus version 3.0 / 3.5.



Important!
After changing the digital system, you should click on **'*Save*'** and **'*Close*'**, because **WIN-DIGIPET 9.0** has to be restarted otherwise some options can't be used.

4.1.2 Serial port for the interface

You can choose between 8 serial ports (COM 1 to COM 8). In most cases port 1 is used. Other port assignments are made in sections **4.2**, **4.3, 4.5** and **4.6**.

Select the serial port, which is connected to your interface.

NONE is used for testing purposes without interface connection.

4.1.3 Transfer speed (baud rate)

- **Märklin**
  For the Märklin digital systems the baud rate is fixed to 2.400 Baud and can't be changed.
- **Intellibox/Twin-Center**
  The Intellibox and the Twin-Center support baud rates from 2.400 up to 19.200 Baud.

  When selecting „*Default*" the program detects automatically the baud rate defined in the Intellibox.
- **ICUM**
  The ICUM is an ISA-bus-card and doesn't support any baud rate settings.
- **Lenz Digital Plus V2.0/3.0/3.5**
  For the old interface **Li100** you have to select **9.600 Baud**. The new interface **Li101F** supports up to **115.200** Baud.

4.1.4 Number of feedback modules connected

When using feedback contacts it is very important to select here the proper number of modules otherwise errors can occur.

If you don't have feedback modules you have to select **NONE.**

You have to select **NONE** also when using the **LDT High Speed Interface HSI-88** because the number of modules for the HSI can be registered on the index card „Hardware – HSI-88". If you have already enabled the HSI-88 interface the combo box for selecting the number of feedback modules is disabled here. That is quite correct.

Important!
When using feedback/track occupation modules with 8 only input channels, these have to be counted as ½ s88-feedback module. Because of this you have to register only one 1 s88-feedback module for two of these.

Important for Lenz user!
For the **Lenz-System WIN-DIGIPET 9.0** automatically selects the number of feedback modules (124 modules - **992** contacts, see **2.5**). These settings can't be changed

4.1.5 Interval for reading feedback modules

Here you determine how fast your feedback modules are read out and displayed. Settings between 100 and 1000 milliseconds are possible. The default value is 300 milliseconds indicating that all feedback modules on your layout are read three times per second.

The lower you set this figure, the faster the readouts are performed. A figure too low might jam the interface and/or disturb the displays on the screen.

It is recommended that you carry out some testing to find out which setting suits your system best. For the Märklin interface your minimum setting shouldn't be below 140.

4.1.6 Break between commands

The Märklin Interface is unable to cope with too short command sequences .Thus, it is possible that in routes switching routines, one or more solenoid devices are „suppressed" or not correctly switched. This depends also on the type of computer used.

Select between 10 and 100 milliseconds; default value is 10 milliseconds. You should increase the setting, if solenoid devices are incorrectly switched or not switched at all.

This is an overall setting for **all** of your solenoid devices. In addition, you can change the switch time of individual solenoid devices; see paragraph **7.2** for details**.**

Note:

No intervals between commands are necessary when using the Uhlenbrock/ modeltreno Intellibox ! The setting is 0 and can not be changed.

4.1.7 Save settings

Having carried out all settings, click on ***'Save'***.

WIN-DIGIPET 9.0 creates a file in the Windows Registry with the name of the active project. All updates and settings are saved here.

Please do not attempt to change, modify and delete values of these files. This should only be attempted after having spoken to the author of the program, in case of difficulties.

A program part is closed without saving data if you click on ***'Close'*** instead of ***'Save'***. You are returned to the main program.

4.2 Index card „Hardware – 2.Interface“

To split the data transfer, a second Interface can be connected to a second central unit 6020/6021.

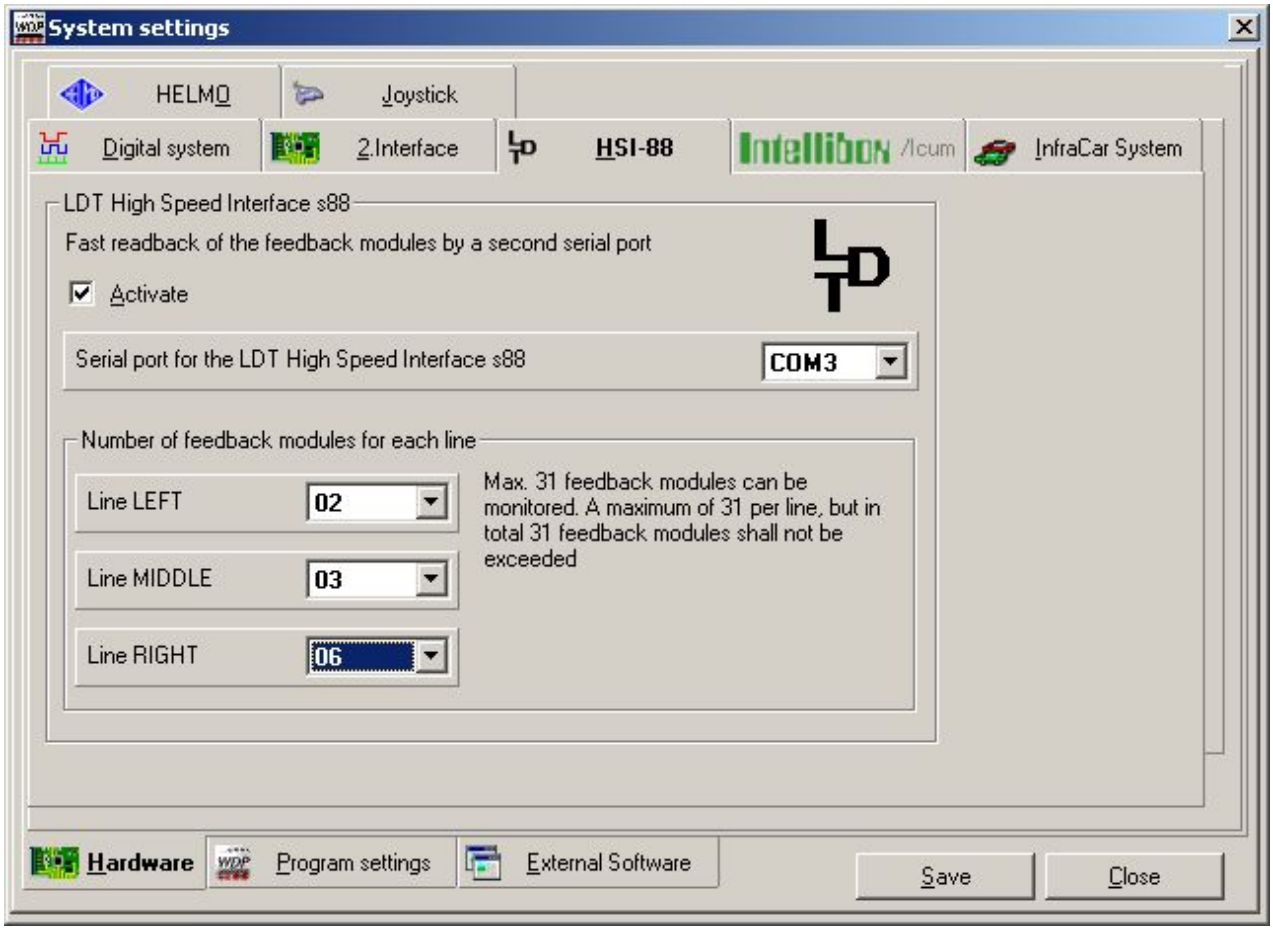
All solenoid activation is now performed using the second Interface. You require an additional COM Interface, a separate circuit, from which the second Central Unit supplies the solenoid devices.

Only if **'Activate'** is checked, will the second Interface be detected and activated by the program. Also **„Break between send commands**“ needs to be set, otherwise the Interface might jam.

Intellibox users need not to discard their Märklin Central unit and Märklin-Interface, but use it in conjunction with the Intellibox.

You can also use a second Intellibox. The second Intellibox would also send DCC commands, but only with 2400 Baud and only up to address 256. In this case the break between commands can be set to 0.

4.3 Index card „Hardware – HSI-88“



The company **Littfinski-Datentechnik (LDT)** in 25482 Heist near Pinneberg (North of Germany) supplies their **LDT High Speed Interface HSI 88** to accelerate the feedback contact messages to the bus of the s88 feedback modules. All Märklin compatible feedback modules can be connected.

The **HSI-88** is able to transfer the feedback information with a transfer speed of **9600 Baud** and not only 2400 Baud like for the Märklin Interface.

The **HSI-88** can not just only read back one feedback line, but **three at a time**. Therefore there is no need to arrange them all like pearls on a cord like you have to do for the Märklin Interface. You may arrange up to **three lines for the bus** in parallel and you have got the advantage, that these s88-bus lines will be performed quicker.

Important:

When using feedback/track occupation modules with 8 only input channels, these have to be counted as ½ s88-feedback module. Because of this you have to register only one 1 s88-feedback module for two of these.

Remark:

You should designate some reserve modules for the left or middle bus line, to be connected to your model railroad later on. With this, you avoid changes in the way to count the feedback contact numbers.

You can arrange 31 feedback modules per line, but summarised you may not exceed 31 together in all three lines. The **HSI-88** requires a separate COM-port on its own.

The **HSI-88** works by event. One or several feedback inputs will be reported **directly** to the PC.

This saves computer capacity and the **feedback time will be shorten**, because the PC needs not check any changes in a cycle (and therefore with delay), but the PC gets all changes reported **active** by the HSI-88.

The Intellibox uses the same principle. If you divide the bus into three lines, an additional acceleration in conjunction with the HSI-88 will be possible for Intellibox-User.

You can activate and configure the **HSI-88** in the system settings of **WIN-DIGIPET 9.0**.

The numbering scheme of all used feedback modules will start with 1 and ends with a maximum of 31, starting at the left bus line from the bottom to the top, after that, from the middle bus line (bottom to top) and the same for the right bus line.

You should connect the amount of feedback modules quite regular to all three bus lines.

You can find examples for the connection and additional information on the homepage of company Littfinski-Datentechnik: www.ldt-infocenter.com

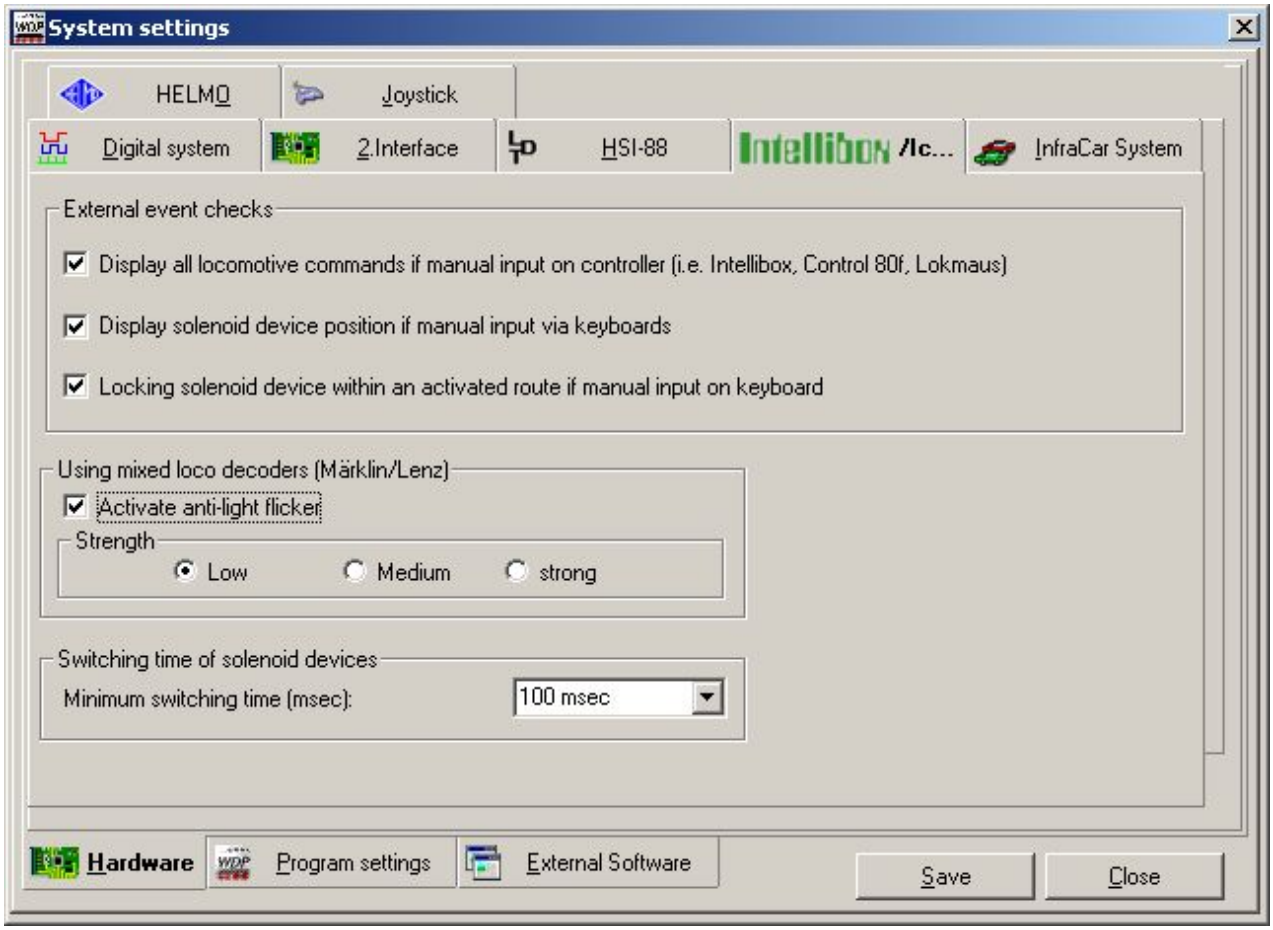
After that, click on “save”.

Tip!

The connections between the feedback modules and the rails are not as sensitive as the connections between the feedback modules and the interface. Therefore we suggest keeping the connections between the feedback modules and between the first feedback module and the interface as short as possible. The feedback modules should be installed near to the HSI. The greater length of the cables from the modules to the rails shouldn’t cause any problems.

This tip for the HSI can be generalised for all feedback modules which are connected to the s88-bus.

4.4 Index card „Hardware – Intellibox/Icum“



Contrary to the Märklin-System, all events on the layout can be fed back to the computer via the Intellibox and the Icum. A real feedback between the system and the computer exists.

4.4.1 External Event Check

All manual inputs on external controllers are displayed on the screen if „*Display all locomotive commands if manual input on controller"* is activated. If you turn the speed control knob on the Intellibox or on a Control 80f, the actual speed is also displayed on the control knob in the loco control field of Win-Digipet Control. Also light, special functions and direction of travel are displayed.

All changes on solenoid devices at manual keyboard input are displayed, if **„***Display solenoid device position if manual input on keyboard"* is activated.

An error message is displayed if „Locking solenoid device within an active route if manual input on keyboard" is activated. This would be the case if you try to access a solenoid device from the external keyboard, within an active route.

4.4.2 Using mixed loco decoders (Märklin/Lenz....)

Intellibox and ICUM offer the innovative possibility to use (nearly) all decoder types on one layout simultaneously (Märklin, Lenz, Trix, Uhlenbrock, Digitrax etc.).

Under such conditions – and only then - Märklin-Decoder could show a small problem: -lights on locomotives might flicker.

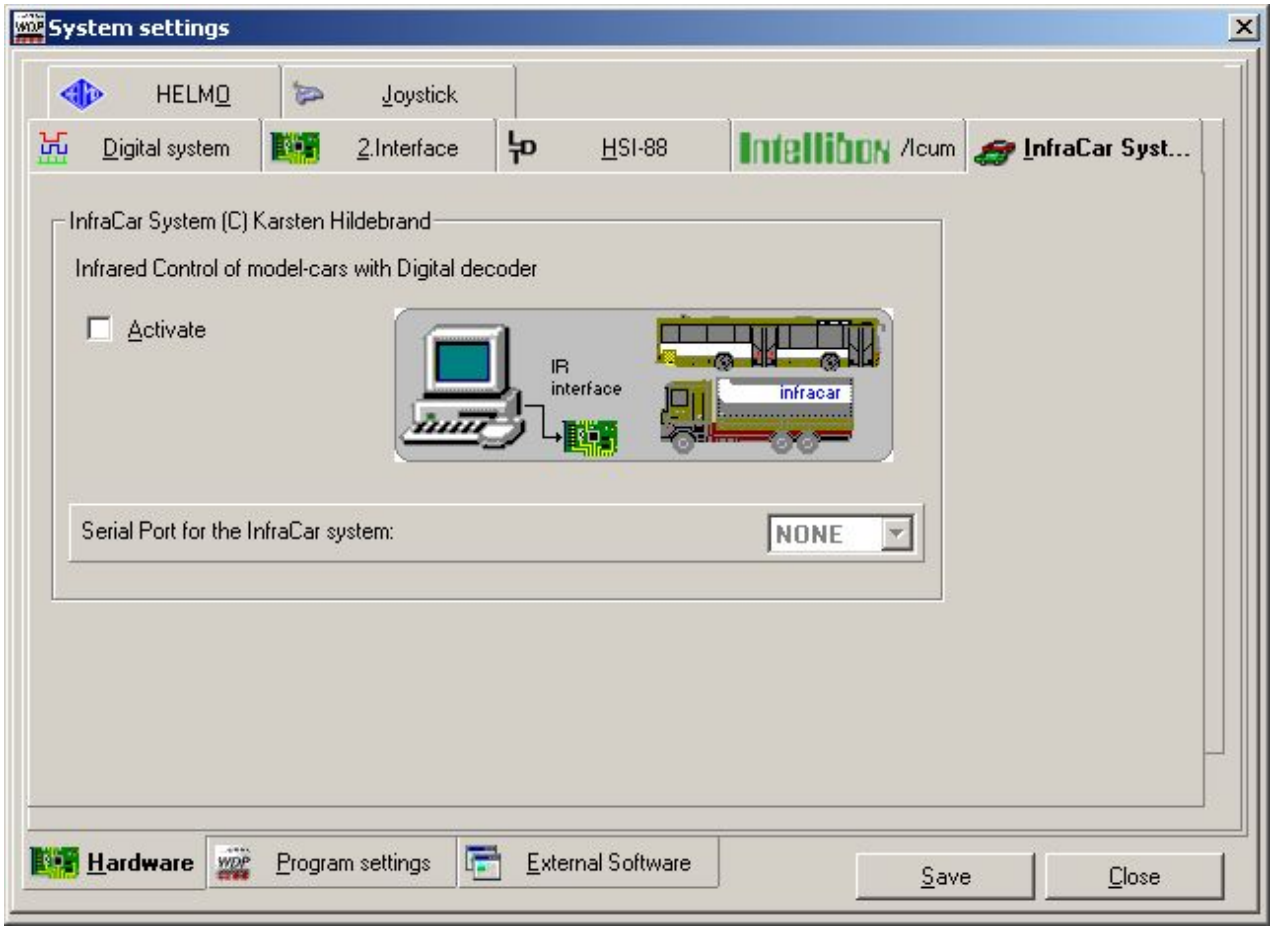
The option *„Activate anti light flicker“ nearly* eliminates completely the flickering of the lights.

Use tests to decide the factor low - medium – strong.

4.4.3 Switching time of solenoid devices

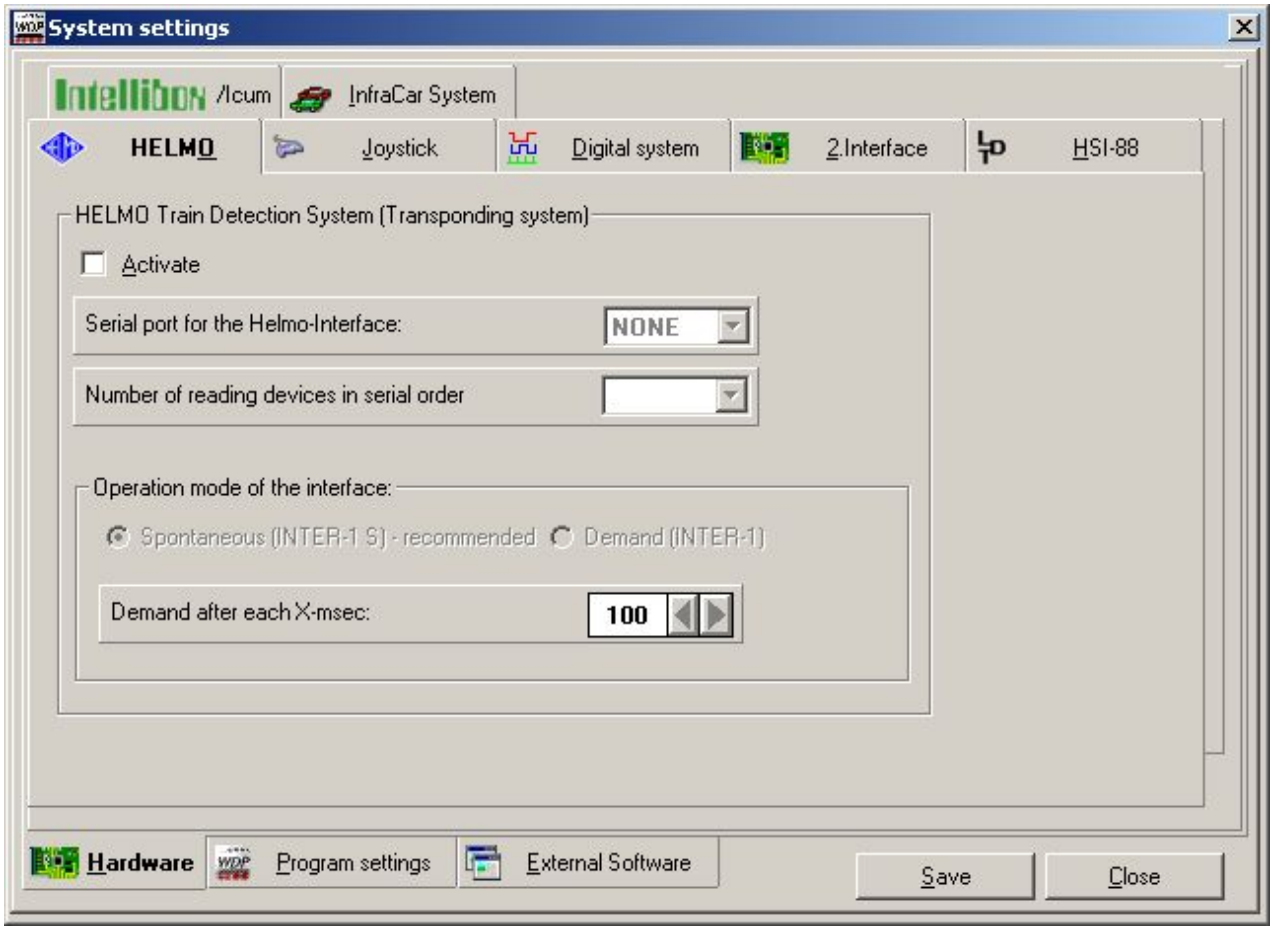
The minimum activation time for all solenoid devices is set here. Values are between 0 to 500 msec. This minimum activation time is adhered to, even when the program has sent a switching-off command. Recommended value is 100 msec.

4.5 Index card „Hardware – InfraCar-System“



On this index card you can (de-)activate the infrared control of model cars with digital decoders. You have to select just the corresponding serial port.

4.6 Index card „Hardware – Helmo“



The HELMO Detection System in conjunction with a transponder mounted at the locomotives makes it possible to identify the exact loco-address if the train rides over these specific reading devices.

A maximum of **30 reading devices** may be installed at your model railroad.

Via an interface and a separate COM-port, the identified addresses will be reported to the program. Two kinds of HELMO-interfaces are offered, for a different way to identify the loco-addresses:

Inter1-S :

This interface reports directly – without specific demand of the program – any change from the reading devices. This is the faster and recommended method, because additional data, which increases the data stream and slow down the system, are not necessary.

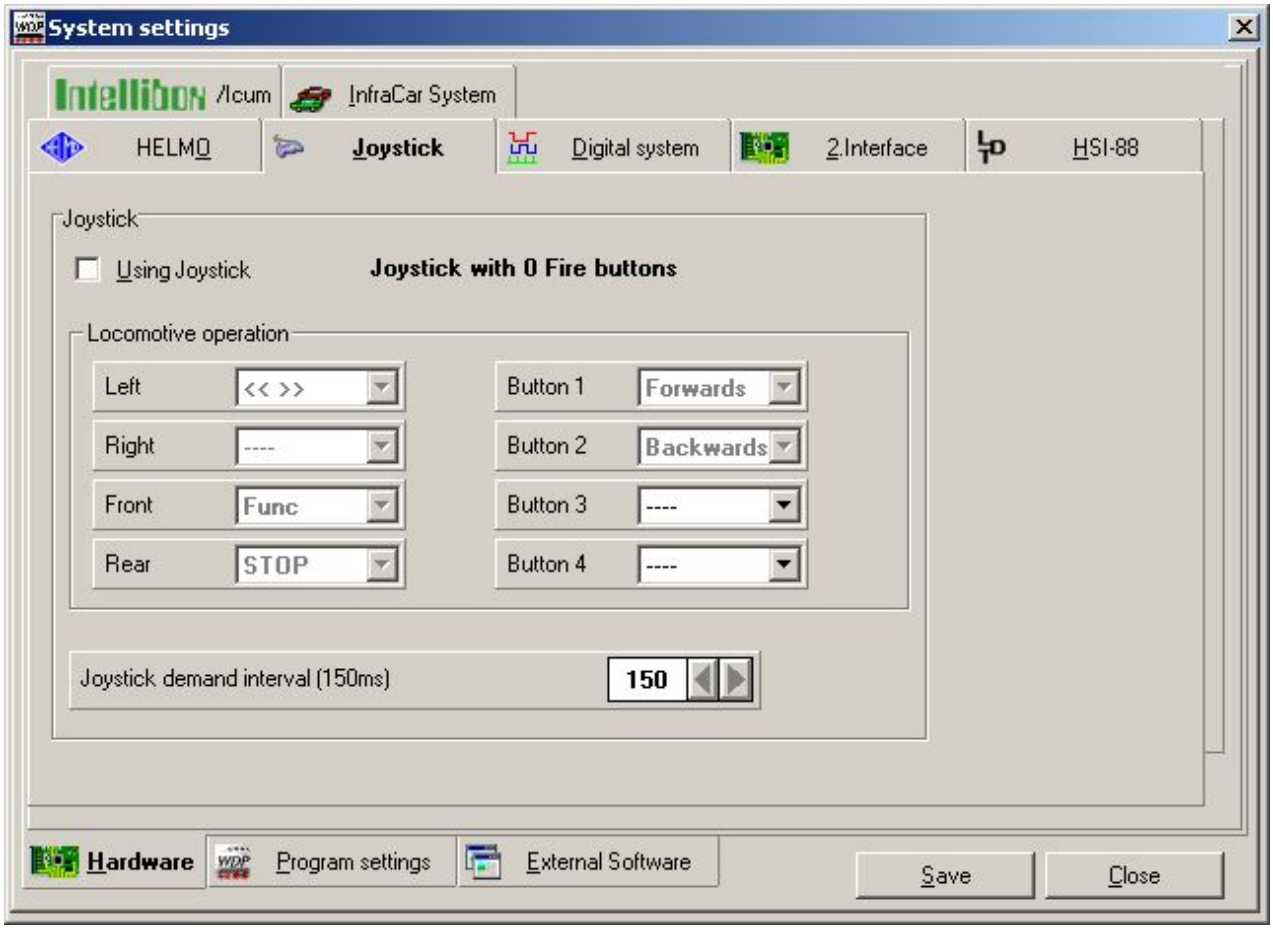
Inter1:

This interface just works on demand by the program. The inquiry time can be individually adjusted.

When you have activated a HELMO-interface, the switch button in the main program will be activated and the amount of reading devices will be displayed and are ready for identifying the addresses (see **18.13.9**).

You can find additional information on the HELMO-homepage: www.helmo.de .

4.7 Index card „Hardware – Joystick“



You can also use a joystick to control the locomotives.

Here, you can activate a joystick. If a joystick is neither installed on your windows system, nor connected, an error message will occur.

The joystick has to be **calibrated correctly** in your windows-setup for game ports/joysticks, before using the joystick

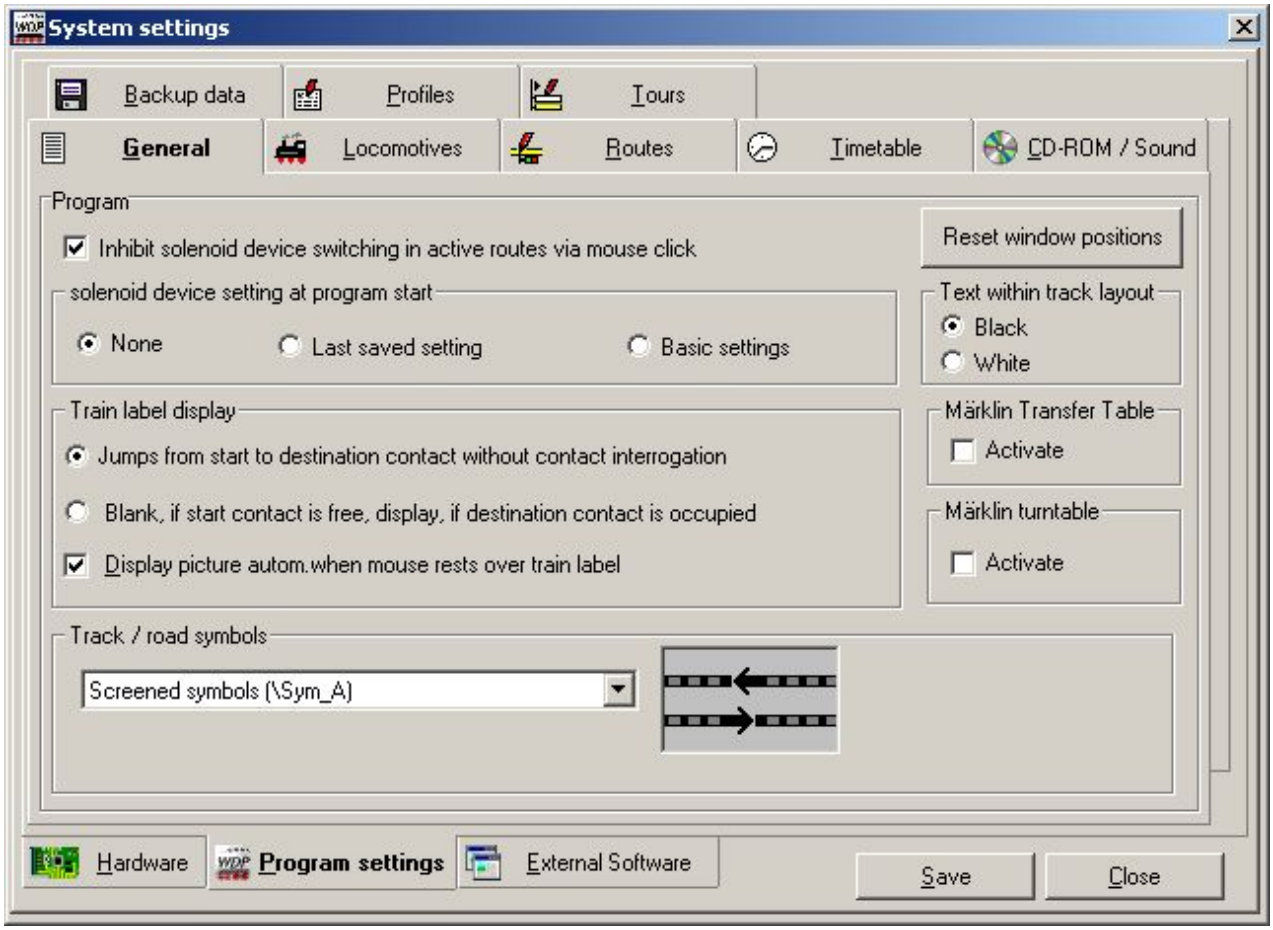
You can configure all functions for the joystick and its fire buttons individually.

The interrogation interval of the joystick can be adjusted individually as well.

But be careful!

Not every joystick can be used properly with **WIN-DIGIPET 9.0**. For example the Microsoft SideWinder Precision Pro **can't** be used for controlling locomotives.

4.8 Index card „Program settings – General“



4.8.1 Inhibit solenoid device switching in active routes via mouse click

All solenoid devices, which should be manually switched via a mouse click in an active route, are blocked are in an active route, if the switch is checked. A message is displayed, informing you about the event.

4.8.2 Solenoid device setting at program start

You can select if and under which condition the solenoid devices should be switched after starting the program...

- No solenoid devices are switched (recommended) or
- all solenoid devices are switched to their last saved setting according to their actual switching position on the screen or
- to their basic settings.

The last two options are only useful, if you make frequent manual changes on the keyboard while the program is running, because when using this options the program starts is more or less delayed depending on the number of the installed solenoid devices.

4.8.3 Settings under „Train number display“

Here you define whether the train number display is performed, using feedback contacts or not.

If yes, select „*Blank, if start contact is free, display, if destination contact is occupied*“. More details in paragraph **18.14.2.**

If no, select „*Jump from start to destination contact without contact interrogation*“. More details in paragraph **18.14.3.**

If you checked the switch *„Automatically display picture when moving mouse pointer on train number*“, the train number field in the track diagram, to which the mouse pointer is pointing, not only displays the train number but also the picture of the locomotive.

4.8.4 Settings under „Colour of text within track“

Here you have the choice between black and white text colours, so that the text colour can be selected according to the background colour, for example when using the German railroad symbols (DB) you have to select the white text colour.

4.8.5 Settings under „Track / road symbols“

In **WINDIGIPET 9.0** and the track layout editor (chapter **6**), there are eleven different kind of track symbol layouts available (see chapter **6.3**):

- Screened symbols **Sym_A**
- Drawn through symbols **Sym_B**
- 3D-Symbols **Sym_3D**
- DB-Standard symbols **Sym_DB**
- Symbols with signals in the centre of the track **Sym_C**
- Street symbols of model cars only **Sym_Auto**
- Railroad and street symbols **Sym_Auto_Bahn**
- User- Symbols **Sym_U**
- Alternative- Symbols **Sym_SP**
- Screened symbols Switzerland **Sym_SBB_A**
- Drawn through symbols Switzerland **Sym_SBB_B**

You determine which kind of track symbols shall be displayed in the track layout editor and the main program.

4.8.6 Settings under „Märklin transfer table/Märklin turntable“

Here you can (de-)activate the additional program functions for the Märklin turn- and transfer table.

You can find further information about this in chapters **14** and **15**.

4.8.7 Reset window positions

For user of **WIN-DIGIPET 9.0**, who use more than on display the button *"Reset windows positions"* was created.

When pressing this button all saved position for the several windows in the program are reseted to their standard position on the first screen. This is very useful to restore a one-display-operation after using more than one display.

Now all windows are **not** centred automatically any longer to the first screen when opening**.**

You can reset the positions of the locomotive controls with a click on the symbol or with the key **"F2"**.

4.9 Index card „Program settings – Locomotives“

4.9.1 Settings under „Locomotives“

At the “Locomotives” index card, you can determine to open the “Loco Controls” (see chapter **5.14**) in small size („Mini“), if you click on the locomotives in the loco selection bar with a left-button-mouse-click (see chapter **18.11.1**), otherwise they will open in large size(„Maxi“).

If you switch a route with the “Start-Destination” function (see chapter **18.5.1**) and the digital address of a loco is marked in a train label display on the track layout and this train is available on its start contact, then the button “Switch + Drive” will be activated. On this frame you can determine to open the Loco-Control simultaneously to the start of the train.

If yes, also the feature “Close Loco-Control automatically after “Switch + Drive” will be activated. Depending on your statement, the Loco-Control will be automatically closed (or not), after the train has reached its destination.

4.9.2 Push button time for the (Locomotive)-function and f1 – f8

Fundamentally, “definition as push key” means, that after switching of a function via mouse click, this switch will be deactivated after a (adjustable) time – the second

mouse click for deactivating the function is therefore not necessary. For example, this is meaningful for functions like “Horn” or “Bell”.

In the Locomotive-Database (chapter 5) you are able to determine, if such functions shall be defined as a push key or not. Are these functions defined as a push key, they will be deactivated (switched off) after the adjusted time.

4.9.3 Edit of individual loco-/ wagon types

The global settings, which loco-/wagon type you define, will be done and saved here. Feel free to overwrite the predefined settings with any inputs you like.

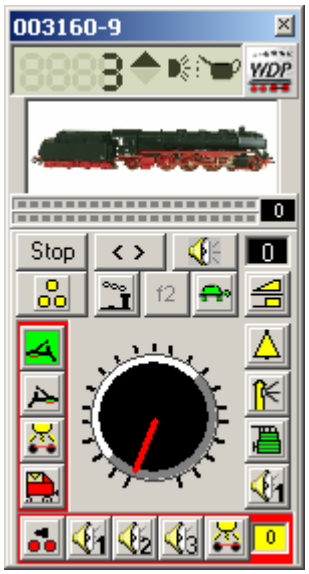
You will find the registered Loco-/ wagon types in the locomotive-database (see **5.3.2**) and the routes-editor (see **8.9**) to release or lock routes for specific loco-/ wagon types.

You can lock routes for specific loco-types, but also for trains, which are (for example) too long for the selected routes.

This is interesting, for example, for fiddle yard tracks: In the Automatic with Demand Contacts (chapter **12**), a too short track will not be occupied by a long train, or an E-loco will not use tracks without power cable.

4.9.4 Display LCD/LED

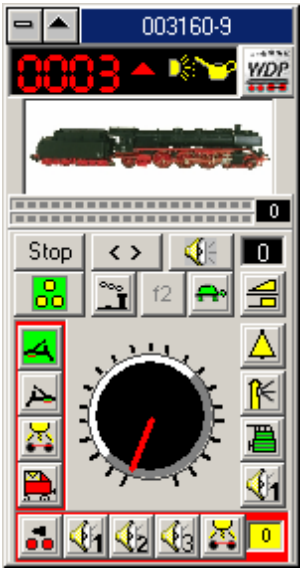
Here you can choose between two possible appearances for the locomotive controls.



left LCD-Display

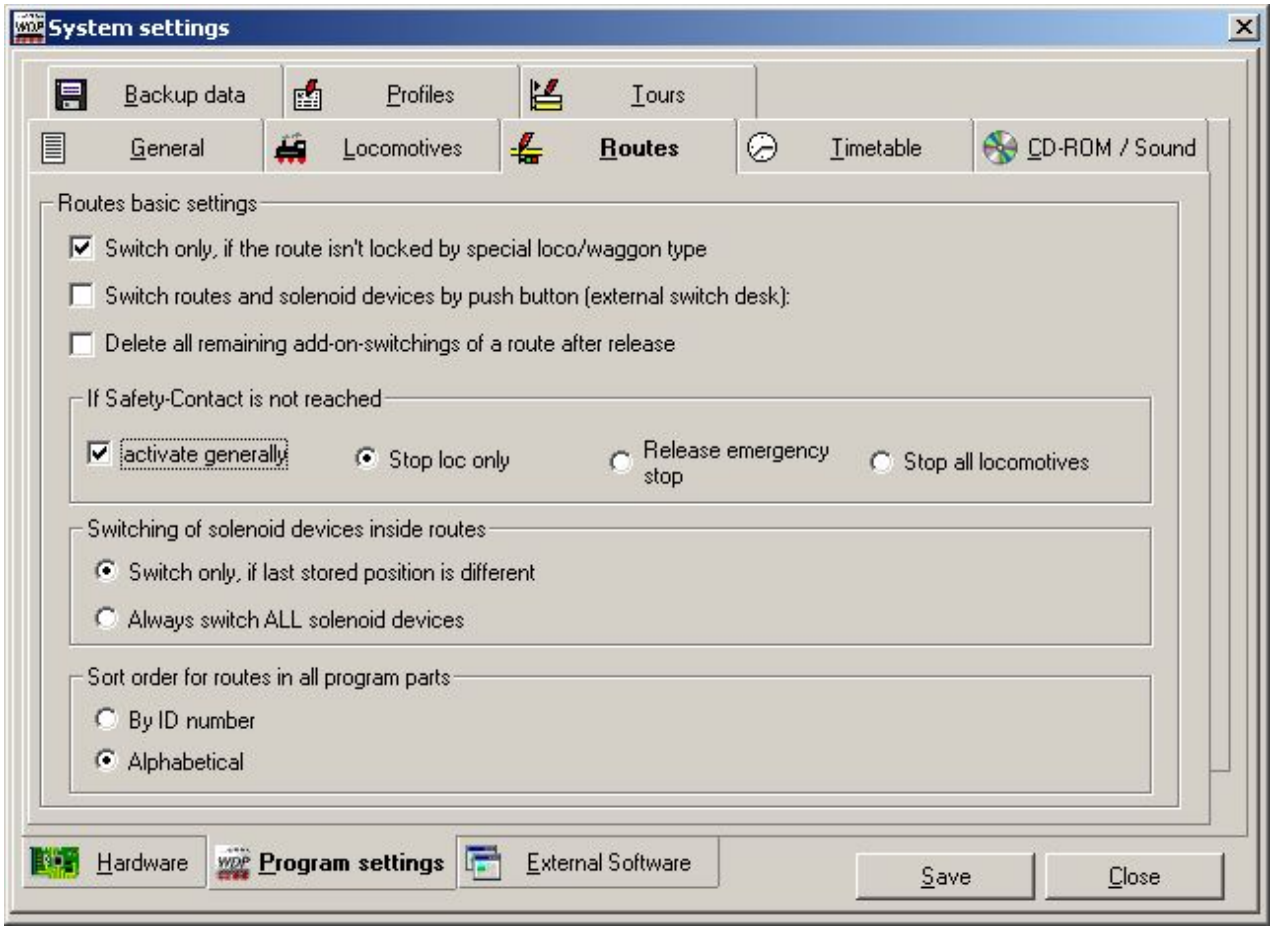
and

right LED-Display



For this locomotive the maintenance time is over and as an indicator for this the small oil cans and are flashing.

4.10 Index card „Program settings – Routes“



4.10.1 Switch only, if the route isn’t locked for a special loco-/wagon type

If you activate this feature, the program checks, whether the designated route is locked for a specific loco-/ wagon type (e.g. E-Loco is not valid for tracks without power cable). If you do not activate this feature, there will be no check. All entries in the routes-editor or in the locomotive-database will be ignored.

This feature is particularly interesting for switching of routes, for the Switch + Ride function (see **18.5.1**), the tours (see chapter **9**) and the Automatic with Demand Contacts (chapter **12**). In the timetable-editor, you will get a warning if you try to assign locomotives to routes, which are normally locked for this particular route.

4.10.2 Switch routes and solenoid devices by push key (external switchboard)

This fundamental switch activates the switching of routes and solenoid devices with an external track layout switchboard by feedback contact keys. The contacts will be defined in the Routes-Editor (see **8.10**). To register a contact in the Routes-Editor, this feature has to be enabled in general in the system settings.

If you quit the Routes-Editor, all such contacts with its ID-number of the corresponding route will be stored in a separate file.

With one button, you are able to switch several solenoid devices / routes. The interrogation will be performed every 500 milliseconds, therefore you have to push a button for at least half a second.

Switch conditions (see **8.7**) will not be taken into consideration, respectively they are not available, and also the release of partial routes (see **8.4**) and the add-on-switching (see **8.8**) are not available as well. The relevant route will be indicated, if a **release**-condition is registered and will be blanked out, if the release-condition is achieved. If no release-condition is registered, the route will just be indicated very shortly.

If you **do not** use an external track layout switchboard, please keep this switch definitely **deactivated**.

4.10.3 Delete all remaining add-on switching of a route after release

By this option all outstanding add-on switchings are deleted when the release condition of a route is fulfilled. It is recommend using this feature quite carefully, because it also compensates bugs in your configuration (wrong settings in the Routes-Editor) or conflicts with not proper working feedback contacts on your model railroad.

4.10.4 If Safety-contact is not reached

Because of problems on model railroad layouts caused by not properly switching turnouts this function was implemented as a **minimal** protection for your trains.

For using this option you have to select for every route in the routes editor a *safety-contact*.

When checking „*activate generally*“ you the choice between three actions to be executed by the program if a safety-contact is not reached within the selected time:

- Just stop the affected locomotive or
- release an emergency stop or
- stop all locomotives.

Indeed, this function does not protect against a possible crash, but, nevertheless, can help to the decrease the amount of damage.

We suggest using the emergency stop option only in exceptional cases, it is better to stop all locomotives.

Important!
In general you should invest some time in proper working hardware and shouldn’t use this option, because it just compensates the effect of bad hardware.

4.10.5 Solenoid devices switching within routes

If you select the function*: "Switch only, if last stored position is different"*, only solenoid devices inside selected routes will be switched, if their settings are different to the current settings registered in the program.

With this function, the serial data stream will be decreased tremendously and the performance of other commands will speed up rapidly, because if the switching of the solenoid devices is already in a correct position, it's not necessary to switch them again.

Caution!

If you switch solenoid devices manually by hand, or routes have just been tested by the program, problems may occur or the program will identify the switch positions in a wrong setting. To ensure, that this won't happen, please reset the default settings of all solenoid devices (see **12.4**) before you start the timetable operation (see **18.15**), the tour automatic (see **18.17**) or the automatic with demand contacts (see **18.16**).

Remark for Intellibox-User:

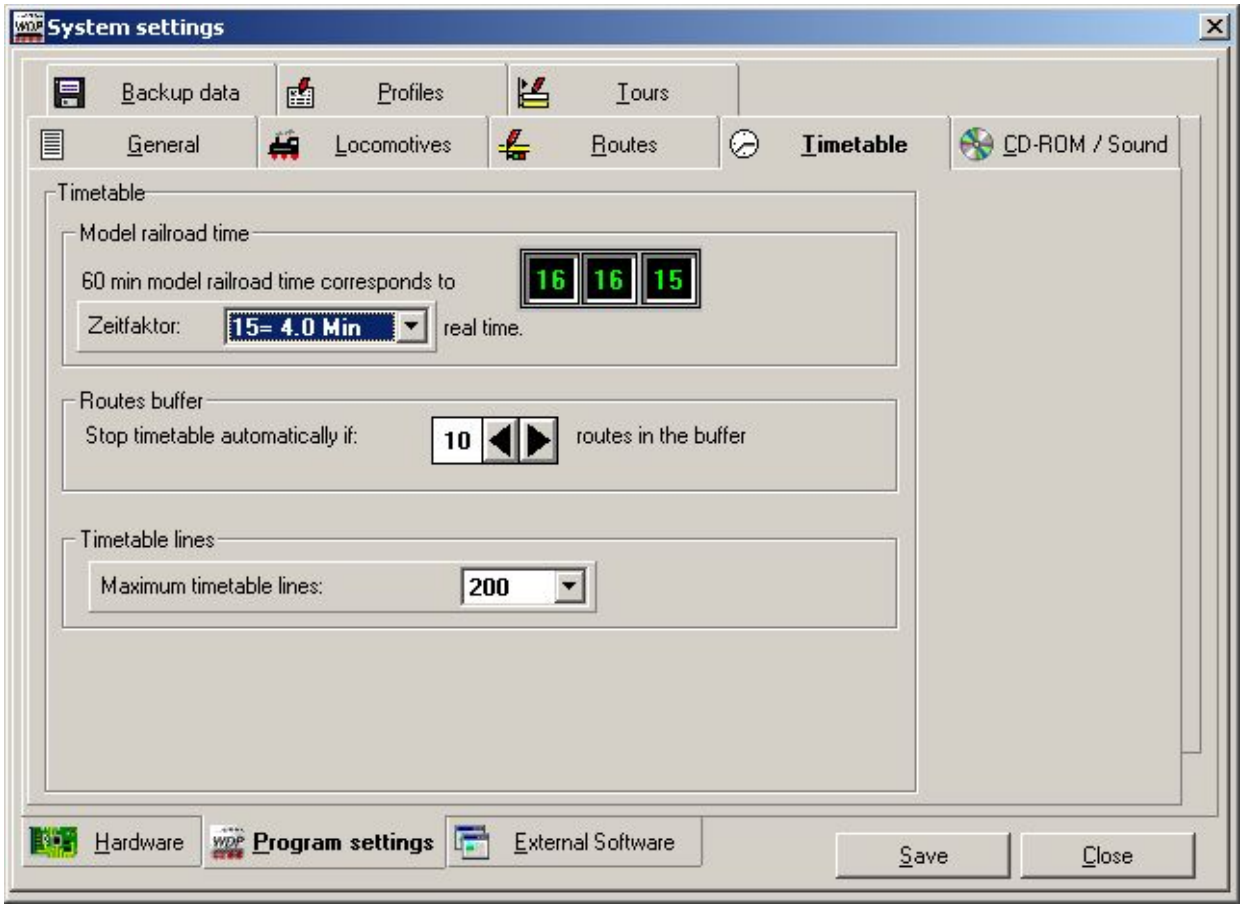
You can also speed up the switching of solenoid devices, if you don't connect any keyboards to your Intellibox and the **special option 33 is set to zero**. Due to this setting, there will be no feedback from the solenoid devices to the keyboards and this will save time in addition.

4.10.6 Sorting function of routes in all program parts

Please determine if either routes shall be sorted and displayed by ID-number or in alphabetical order in all program parts.

You can, nevertheless, select another sorting in the routes editor according (see **8.20**).

4.11 Index card „Program settings – Timetable“



If you intend to operate your digital railroad by the **WIN-DIGIPET 9.0 Timetable System,** you have to carry out some basic settings first. See also chapters **11** and **18.**

4.11.1 Model railroad and Real-time

Select the ratio of model railroad to real time under *„Time factor“* in the formula:

60 minutes model railroad time are equal, using time factor X, to Y minutes real time.

Select „Y“ in **15** steps between 60 and 4 minutes; „X“ changes automatically.

4.11.2 Number of lines in the routes buffer

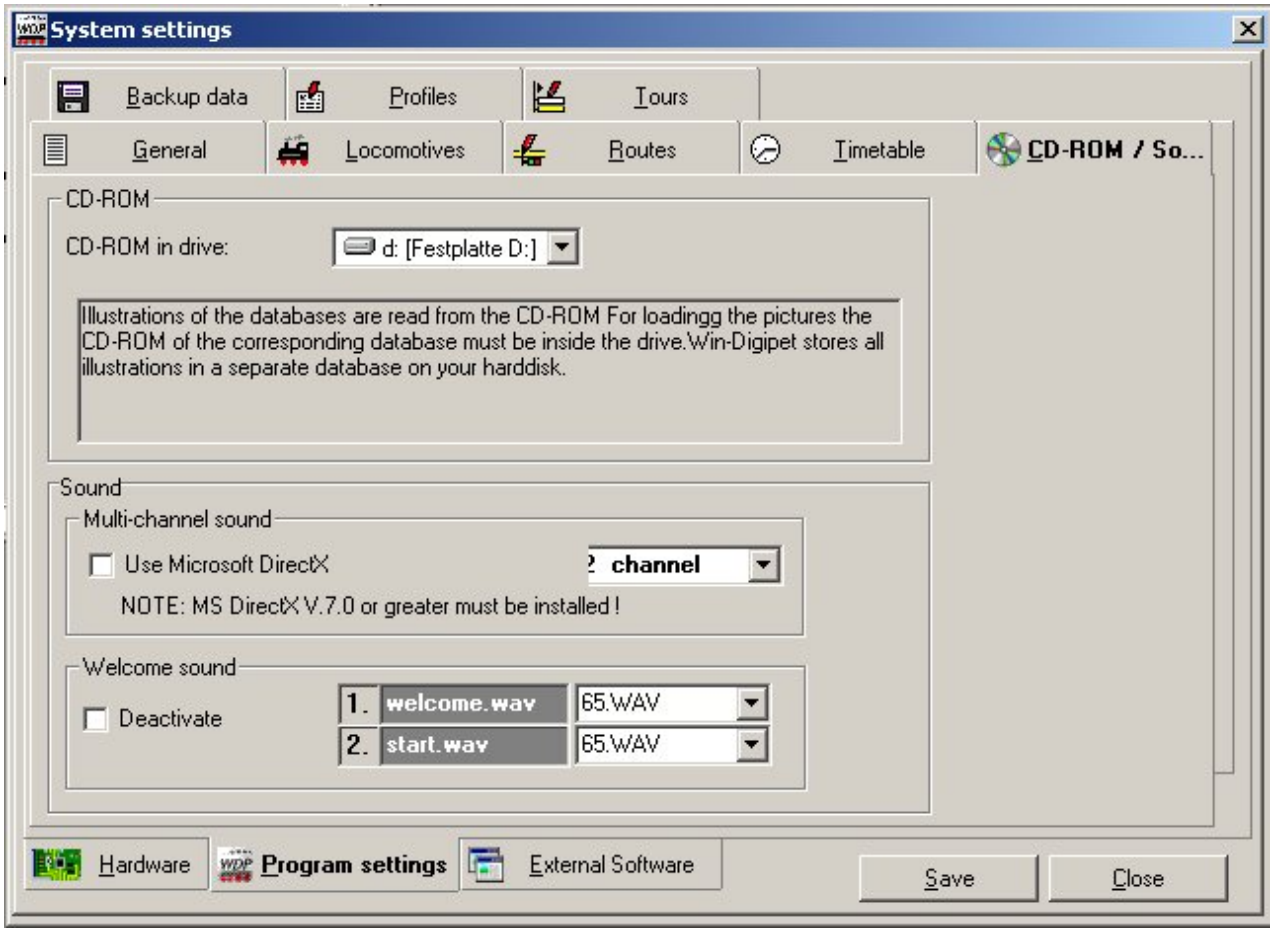
Routes which could not be switched in a timetable at the given time, are filed in a „routes buffer“. Details in paragraph **18.15.3** to **18.15.6.**

The timetable stops automatically when the buffer is full. Select the size of the „Routes buffer“ between one and 100 lines; default is 10.

4.11.3 Number of lines per timetable

You can determine a maximum of 100, 200, 300, 400, 500, 600, 700 or 800 lines for each of your timetables. Default value is 200 lines. Further details in paragraph **11.2.**

4.12 Index card „Program settings – CD-ROM / Sound“



All available drives on your system are displayed on the index card *‘CD-ROM/Sound’*. Click on the drive letter of your CD-ROM-Drive.

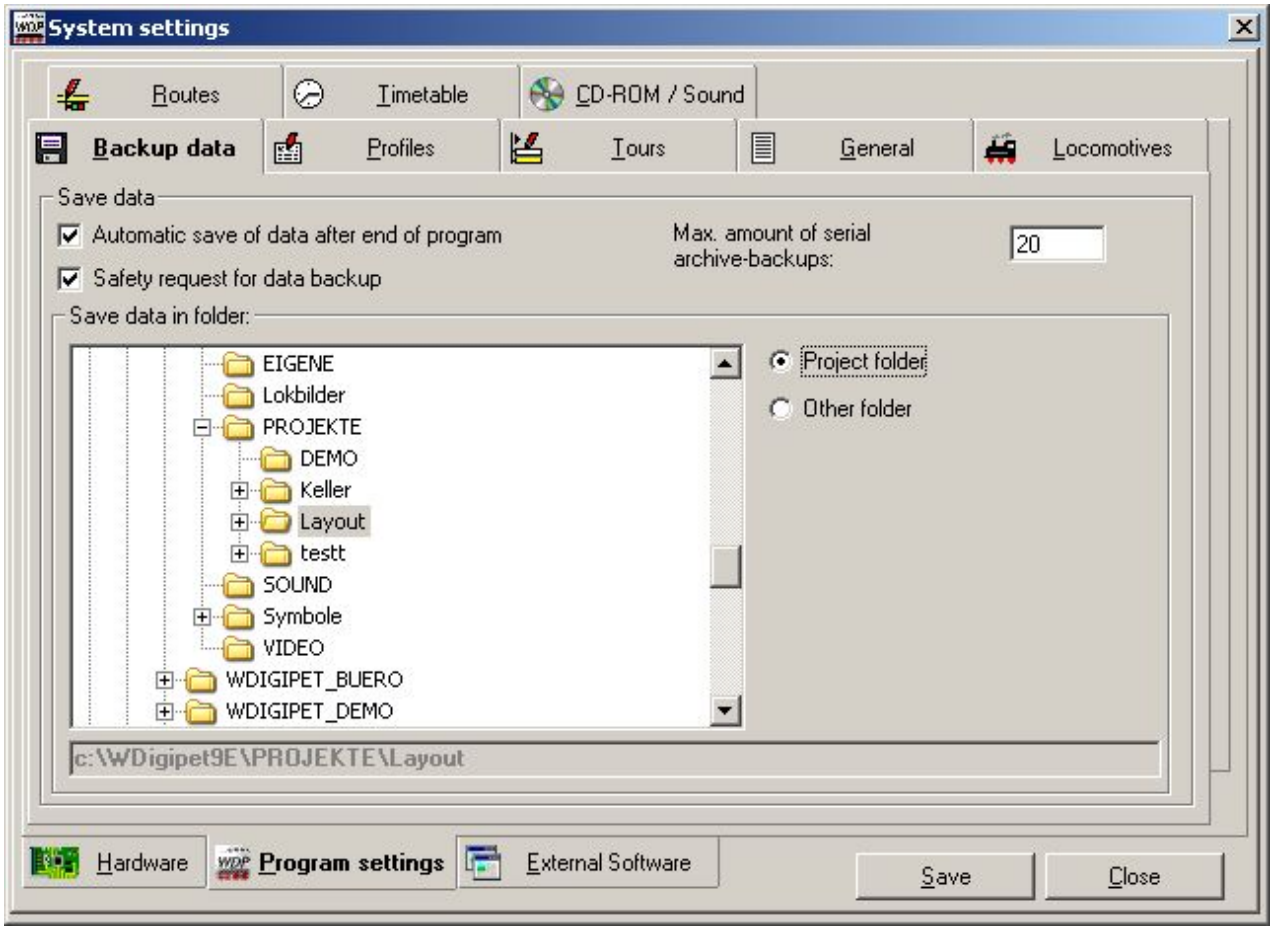
In the frame *“Sound”* you have the choice to use Microsoft DirectX for multi-channel sound. Prerequisite: Direct X Version 7.0 or later is already installed on your computer. Up to **8** channels may be used simultaneously.

Due to this, a long sound won’t be discontinued, if a new sound will be released by a contact event (see **10.3.2**).

If you experience sound problems, disable this feature. Then only one sound can be played at one time and a new sound will interrupt the previous one.

You can either disable or select your favourite “**Welcome-Sound**” (“Welcome to WIN-DIGIPET”), which you will hear, when you start **WIN-DIGIPET 9.0** (1st and 2nd sound at program start).

4.13 Index card „Program settings – Backup data“



4.13.1 Automatic save of data after end of program

On this index card you can decide if you want to make automatic backup copies of your data and select the relevant options. If you work with several projects or change your project very often you should check *„Automatic save of data after end of program“*.

This option helps to prevent you from losing data.

When you check „*Safety request for data backup*“ a safety request will be displayed every time you leave to program, this request allows you decide whether to make a backup this time or not.

You can choose where to backup your data...

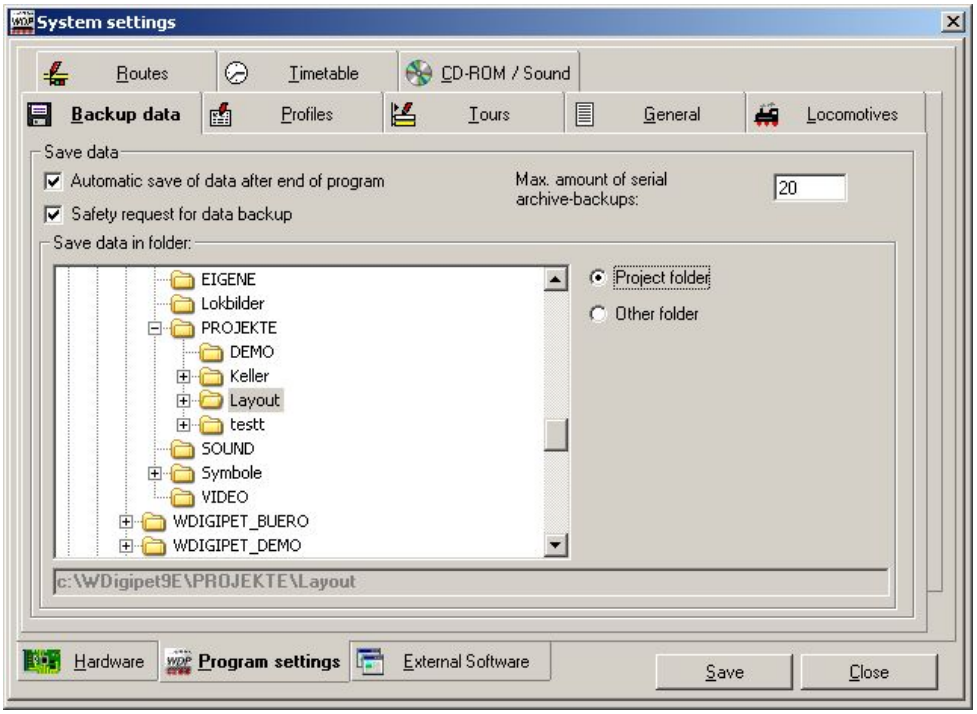
- Archive-Backup directory in the project folder or
- Archive-Backup directory in another folder.

Advanced explanation!
The project folder is not the folder “PROJEKTE”, but it is a subfolder of the folder “PROJEKTE” with the same name as the project. If it doesn’t exist it will be created automatically by **WIN-DIGIPET 9.0** (see **3.5.1**).

4.13.2 Data backup into the project folder

This is the default setting.

You don't have to make any further settings for selecting the backup folder. After the first automatic backup the program settings will show the project's folder as backup folder.

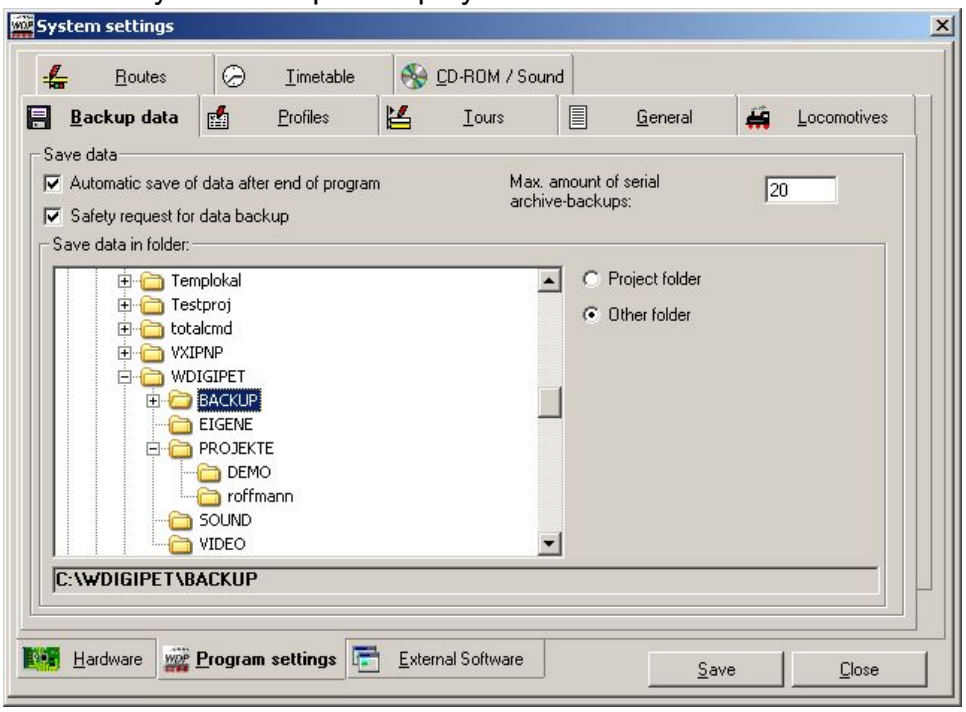


4.13.3 Data backup into another folder

If you want to backup your data to another folder select *"Another folder"* and select the backup folder in the left window.

The currently selected folder for your backup is displayed in the box under the folder selection window (the selection window is similar to the Windows Explorer).

You can select any drive of your computer similar to the data maintenance (see **3.5.2**) as destination for your backup. You can even select network drives if created. In this folder **WIN-DIGIPET 9.0** creates automatically a subfolder with the name of your project.



The archive backups will be created in subfolders of this folder.

Important!
Never select a subdirectory with the name of your project, because, otherwise, a subdirectory with the name of your project is created in this directory again.

4.13.4 Max. amount of serial backup copies

Independent from which folder you selected as backup folder, you can select a *„Max. amount of serial backup copies“* between 1 and 9998 to be created by the backup routine. Normally you should select between 5 and 20 to get sufficient results.

These archive backups need a great storage capacity, so your hard disk has enough free space. For example: every AKxxx. DAT needs 3.139 KB.

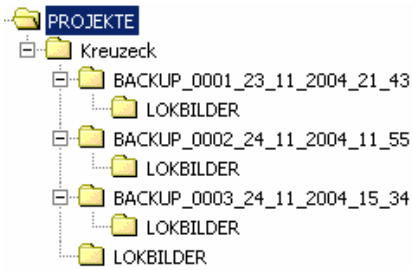
WIN-DIGIPET 9.0 creates in the backup folder further folders using the following nomenclature:

„BACKUP_XXXX_DD_MM_YYYY_HH_mm“. This folder will be used to backup the data. The abbreviations mean:

- XXXX — Sequential backup number 0001-9998, when reaching 9998 it will be automatically continued with 0001
- DD_MM_YYYY — Date of the backup
- HH_mm — Time of the backup

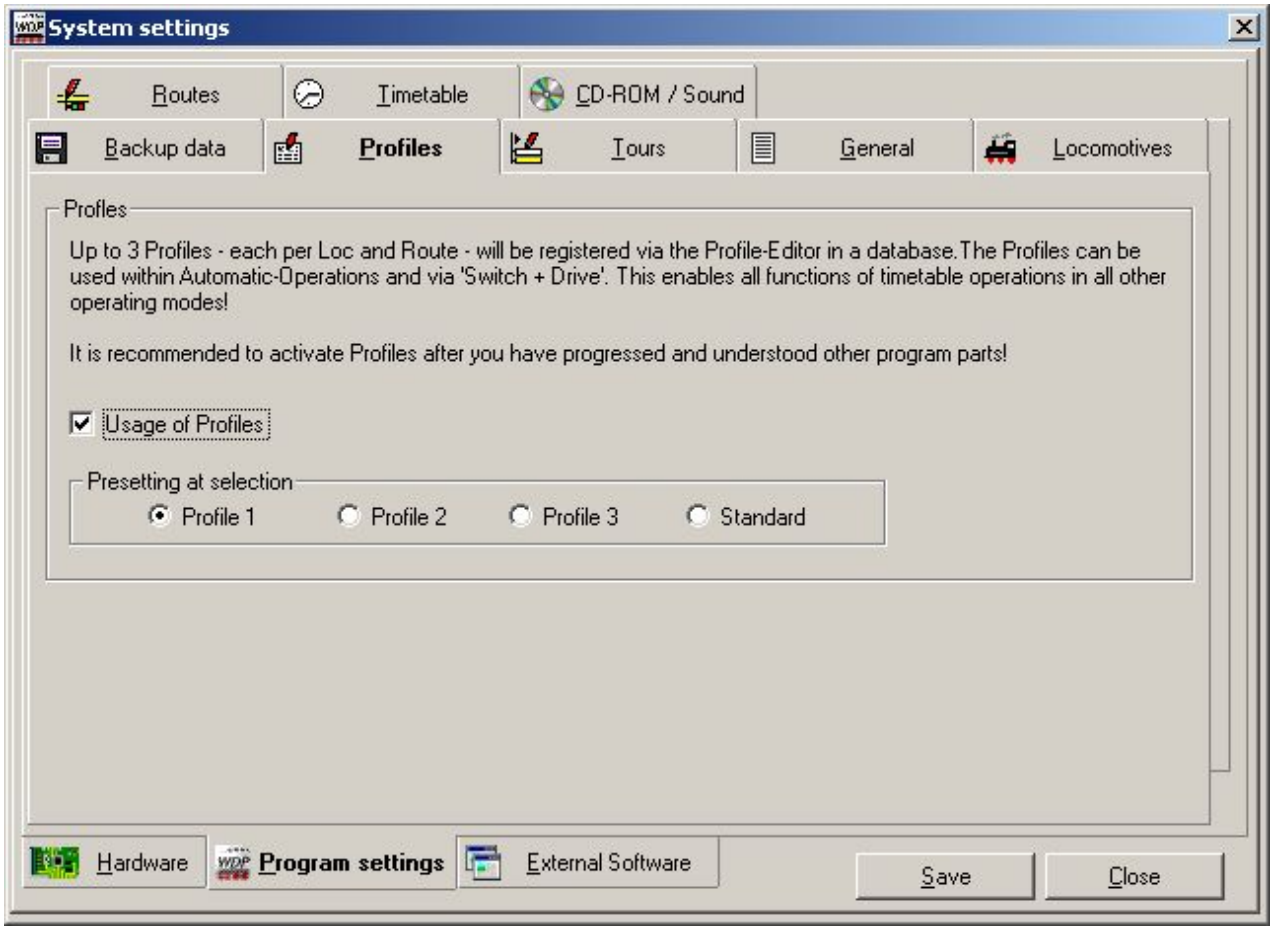
If you select for example “20” as maximum amount of backup copies, the oldest backup copy will be deleted when the 21. backup copy is created.

When decreasing the maximum amount of backup copies and caused by this more than one backup copy would have to be deleted a security request will be displayed..



Using the „Data maintenance“ (see **3.5.3**) you can restore data from your archive backups.

4.14 Index card „Program settings – Profiles“



4.14.1 Usage of profiles

On this index card you can activate the usage of profiles.

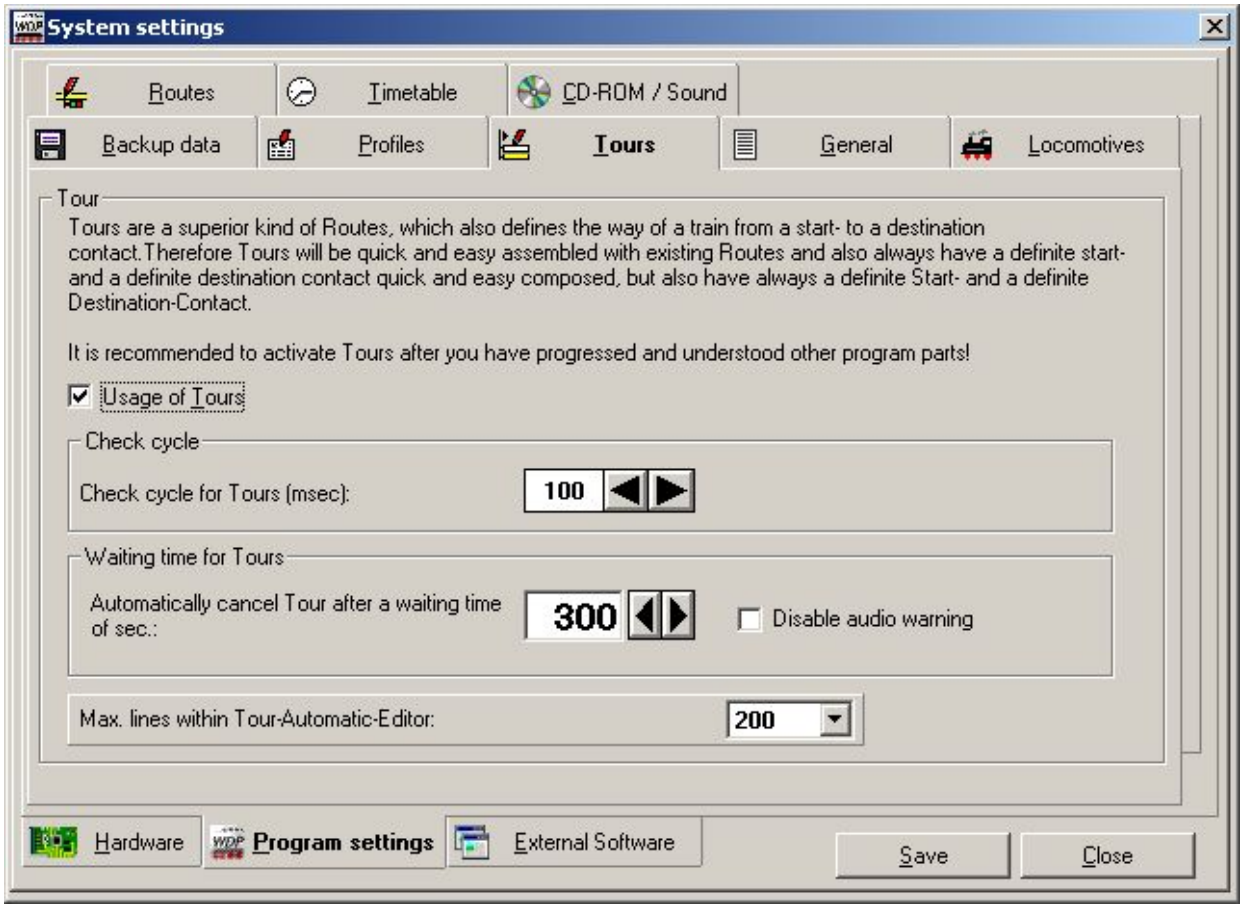
Only when checked...

- The menu commands <File> <Profile-Editor>
- and the symbol in the toolbar are active.
- the profiles are available in manual and automatic operations.

4.14.2 Presetting at selection

If you have created profiles (see **10.2**) you can preselect which profile to use with the „Start/Destination function“, so you don’t have to change from „*Standard*“ to „*Profile 1*“ every time. If no „*Profile 1*“ exists automatically „*Standard*“ would be used. When using „*Standard*“ the route will be executed as defined in the routes editor without any profile.

4.15 Index card „Program settings – Tours“



4.15.1 Usage of tours

On this index card you can activate the usage of tours.

Only when checked...

- the menu command <File> <Tour-Editor>
- the menu command < File > <Tour-Schedule-Editor>
- the menu command < File > <Tour-Automatic>
- and the symbols in the toolbar are active
- the tours are available in manual and automatic operation.

4.15.2 Check cycle for tours

The check cycle defines the time between to checks of the check contact of active routes used in tours (see **8.7.3**). When the checked contact has been reached and the next route of a tour is free, the route will be switched automatically.

This check cycle is similar to demand time in the DC operations.

You should keep in mind, that a smaller check cycle time results in a higher processor load . In dependence of the power of your PC and the size of your model railroad layout 250 msec could cause better results in operation than a value of 100 msec.

You will have to find the ideal value by experimenting.

4.15.3 Automatically cancel tour after a waiting time

With this setting you determine, when to cancel a tour if it cannot be continued. Reasons for discontinuation can be...

- the next routes are still occupied
- the next route is not allowed for this type of train (Check for error in tour!).

If the tour cannot be continued after the selected time, a short message will be displayed and a warning tone will be played („Ding-Dong“). When checking „Disable audio warning“ no warning tone will be played.

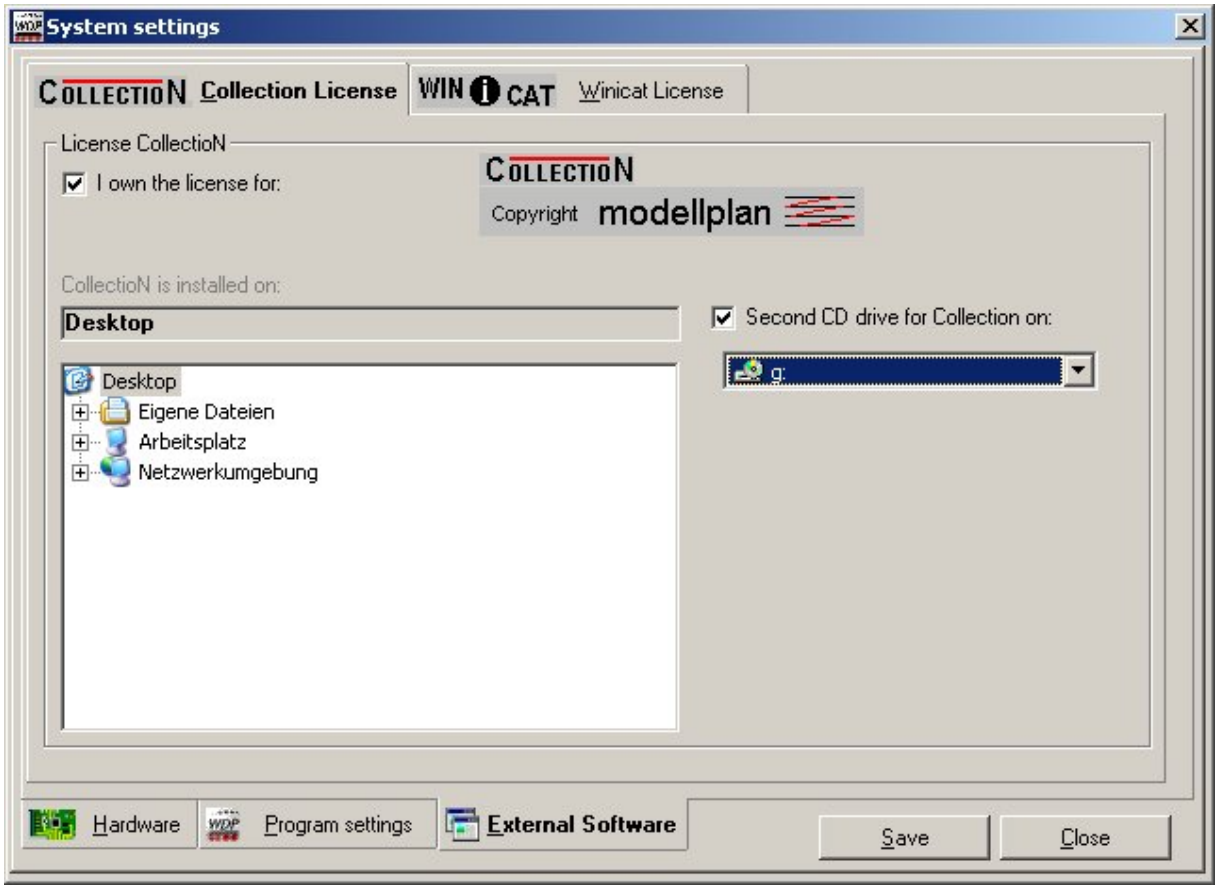
The affected tour will be treated differently...

- using „Switch + drive“...
  - the tour stopped
  - the tour in the tour inspector marked by a red Hour glass
  - the colour of the train number remains green
  - no further warning will be displayed
- in the demand contact operation with **unchecked** „With tour departure time“...
  - the tour stopped
  - the tour in the tour inspector marked by a red square
  - the colour of the train number remains green
  - no further warning will be displayed
- in the demand contact operation with **checked** „With tour departure time“ and **without** alternative DC route or tour...
  - the tour stopped
  - the colour of the train number switched from green back to black/white
  - the tour in the tour inspector marked by a red Hour glass
  - a short warning message will be displayed and a warning will be played if not disabled
- in the demand contact operation with **checked** „With tour departure time“ and **with** alternative DC route or tour...
  - the tour stopped
  - the colour of the train number switched from green back to black/white
  - a short warning message will be displayed and a warning will be played if not disable
  - the tour will be deleted in the tour inspector
  - the train will drive on controlled by the demand contact operation

4.15.4 Max. lines in tour automatic editor

You can determine a maximum of 100, 200, 300, 400, 500, 600, 700 or 800 lines for each of your tour automatic files (*.ZFA). Default value is 200 lines. Further details in paragraph **13.1.**

4.16 Index card„External Software – Collection License“



WIN-DIGIPET 9.0 enables you to represent each of your **locomotives** with its **picture**. For this purpose picture data has to be entered into your system.

WIN-DIGIPET 9.0 comprises the picture data of all Märklin locomotives with the reference numbers 26xx, 36xx, 37xx and 39xx (see paragraph **5.2.1**); this is a database containing more than **375** pictures.

There are also various programs by third parties on the market. Well known are the data bases „Collection“, by Modellplan in Göppingen and „WiniCat“, produced by a Belgian company.

You can even scan your own pictures into WIN-DIGIPET; for details see paragraph **5.2.3**.

„Collection Version 2004“ contains the numerical data and picture data of all locomotives in gauge 00- and H0- manufactured by Märklin between 1935 until February 2004.

If you purchased the data base „Collection“ by Modellplan, insert it into your CD/DVD-ROM drive and carry out the installation according to the Modellplan manual.

The installation path **C:\COLLECTION\MAERKLIN\HO** is set to default value; if you do not modify it, the executable program (.exe) of „Collection“ will be in this directory.

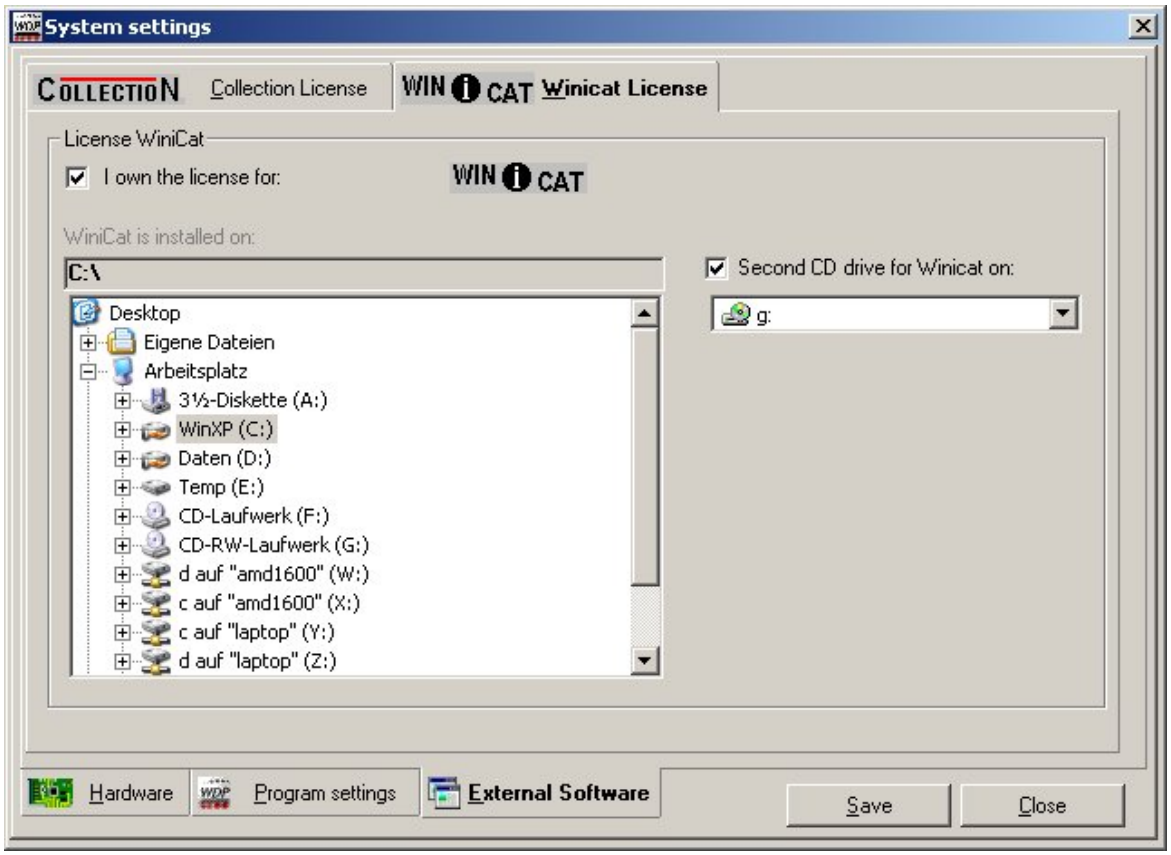
Click on the index card „Collection License” and tick yourself as licensee in the upper left-hand corner.

Select the drive and folder in the middle of this index card in which „Collection“ was installed. At the left you will see this message „Collection is installed on C:\COLLECTION\MAERKLIN\HO“.If you modified the installation directory during the installation of „Collection“, you should set the correct directory in which the executable program is stored.

Should the attempt to get access to the database of Collection fail, you will get the message: „Collection (.EXE) not found!“

If you have got a second DVD-/CD-ROM drive, you can select this second drive for your Collection-database. A change of the DVD-/CD-ROMs for WIN-DIGIPET-database or Collection-database is not necessary anymore. This drive has also been selected on this index card.

4.17 Index card „ External Software – WiniCat License“



The database is installed and inserted in your CD-ROM Drive, proceed as in **4.16**.

4.18 Com port settings (COM1 etc.) of your PC

- The settings of the baud rate in the Windows setup have no effect on **WIN-DIGIPET 9.0**!
- The baud rate for the interface can only be changed by the program settings of **WIN-DIGIPET 9.0**
- The P50X for the Intellibox will always be used for the Intellibox, even if you have deactivated it in the IB.
- For using the IB and **WIN-DIGIPET 9.0** using the P50 protocol the Digital system has to be set to „Märklin/Arnold", the IB must be reseted and then **WIN-DIGIPET 9.0** restarted.

We suggest only changing the settings for the FIFO buffer using the Windows device manager because these changes can not be performed by **WIN-DIGIPET 9.0**. For…

- the **Intellibox set the buffers to maximum** and
- for the **HSI-88 to minimum**.

4.19 Exit System Settings

All system settings are saved, if you clicked ***'Save'*** .

You can leave the system settings with the button ***'Close'*** or by a click on the symbol ☒ in the caption bar.

5 – LOCOMOTIVE-DATA BASE

5.1 General – Upgrading from previous versions

In this part of the program, all of your locomotives and functionality models will be registered and managed. An unlimited amount of locomotives can be stored, but a maximum of 80 for the Märklin system and 200 for other systems can be controlled simultaneously.

With the controlling concept of **WIN-DIGIPET 9.0** you can also register and switch the special functions F1 to F8.

In an impressive way **WIN-DIGIPET 9.0** gives you an outstanding overall control of all events on your layout. Each locomotive with its coloured picture is displayed on the screen.

In WIN-DIGIPET 9.0 locomotives are comfortably controlled through locomotive control panels („Win-Digipet-Controls“, „Loco-Controls“). You can display those two controls in three different sizes („Maxi“, „Mini“ or „Micro“) on the screen, depending on the operation of the trains (see **5.14**).

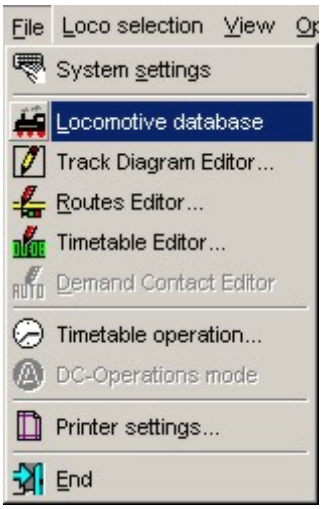
Furthermore it is possible to control up to 10 locomotives via the command bar without opening any locomotive control. This command bar is of course synchronized with the locomotive controls.

Important!
After the first start, after an update from WIN-DIGIPET version 5.0, 7.x or 8.x to **WIN-DIGIPET 9.0**, the locomotive database will automatically be converted.

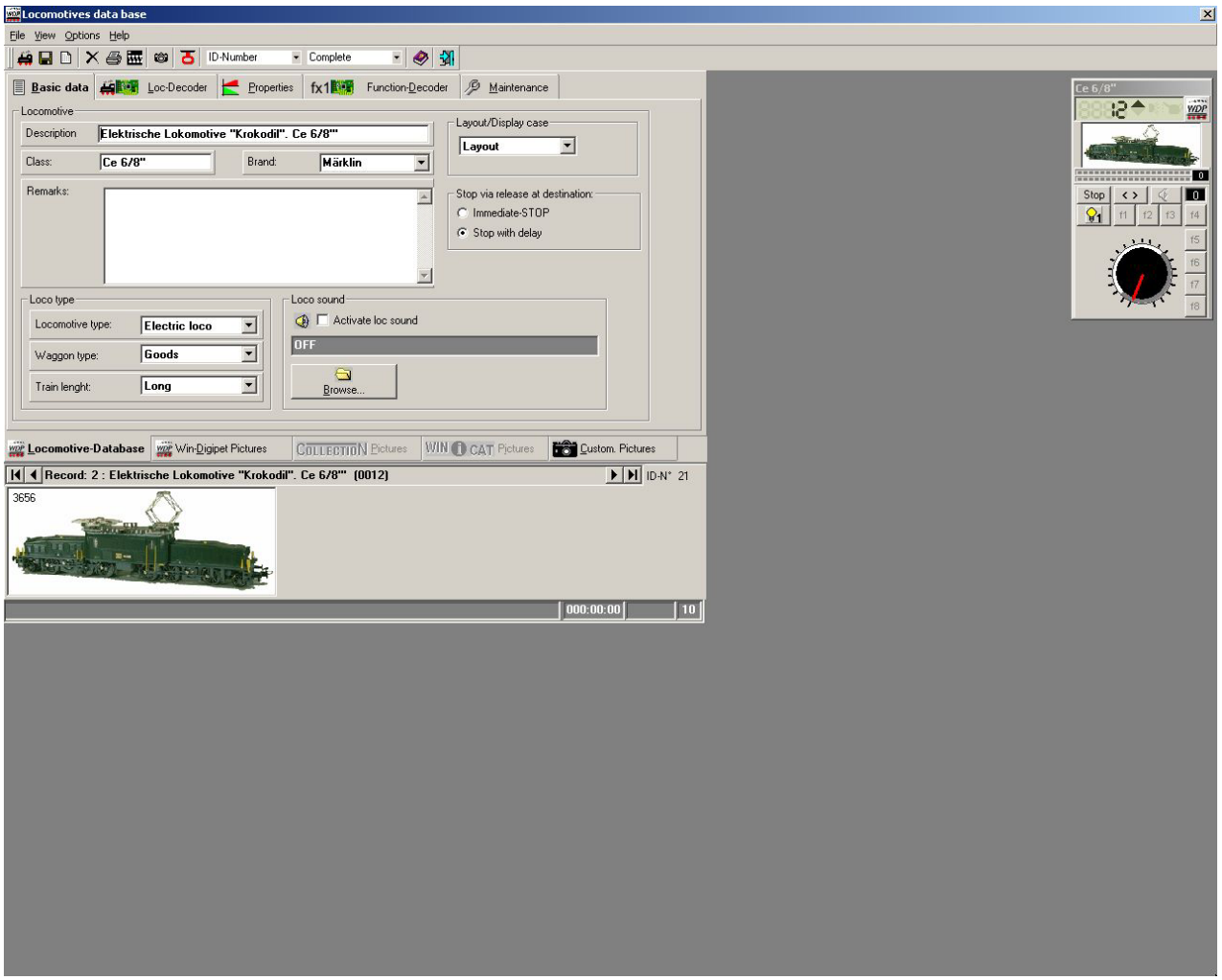
You should **check and correct** or **assign again**…

- Decoder-**Types**
- Function (f0) and special functions (f1-f8)
- Minimal rated speed for- and backwards
- Maximal rated speed for- and backwards
- Acceleration and deceleration parameters
- Starting speed
- and the functionality decoder.

In most cases **WIN-DIGIPET 9.0** converts your old data (see **5.44**).



In the menu bar click on <File> and <Locomotive Data Base> or on the switch in the toolbar.



After opening the first locomotive is displayed in the locomotives database with its data. The picture above shows one of the two example locomotives of the database which you will find when creating a new project.

To record a new locomotive click on <File> and <New> (or in the toolbar on switch).

Enter the data of your locomotives into this entry mask. If you don't need the example locomotives you can overwrite their data with the data of your locomotives.

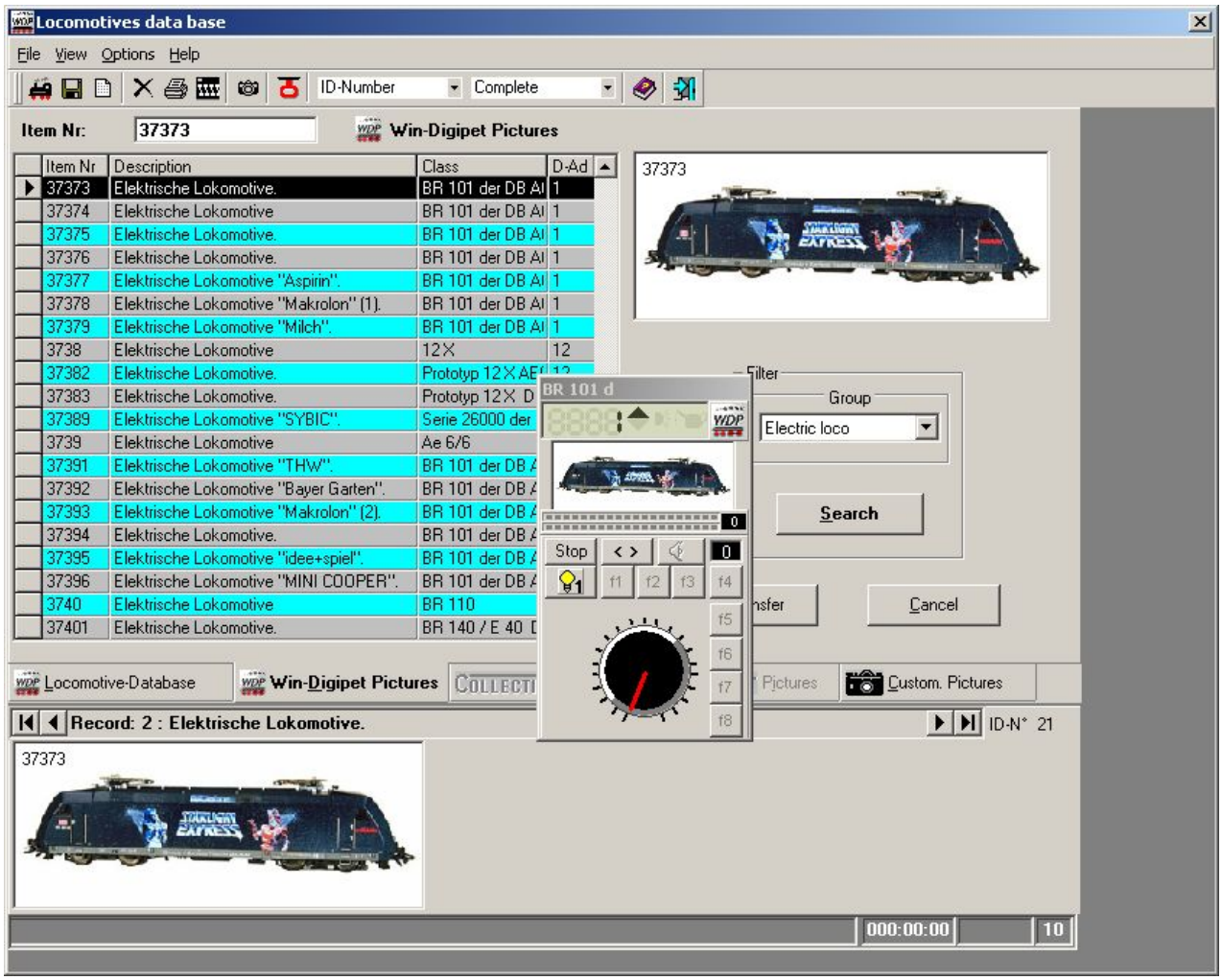
5.2 Determine pictures of locomotives

First select a picture matching the locomotive you intend to record; four alternatives are at your disposal...

- WIN-DIGIPET pictures
- Collection pictures
- WiniCat pictures
- Own pictures.

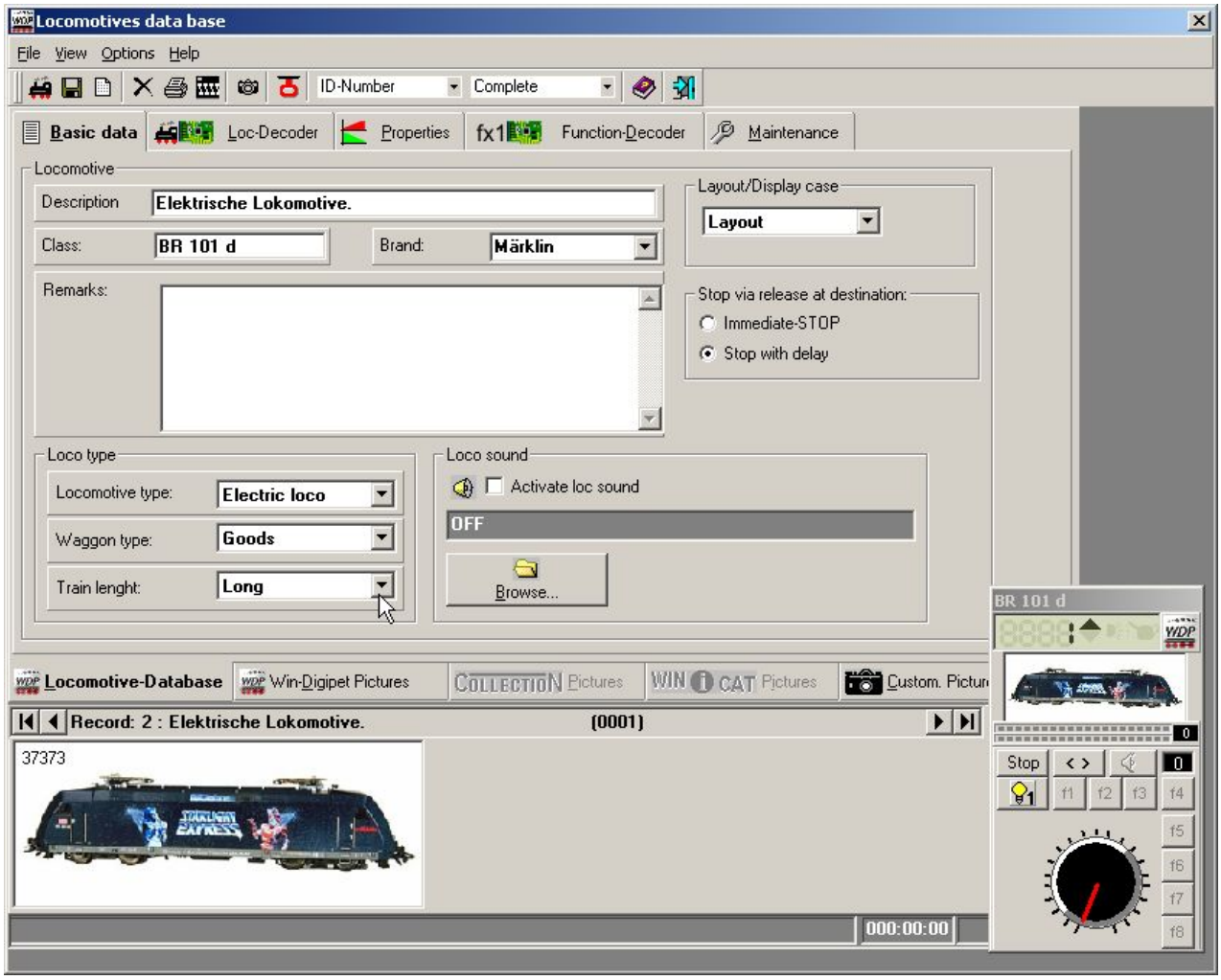
5.2.1 Win-Digipet -Pictures

Select the index card „Win-Digipet Pictures “.A list with 375 Märklin-Digital locomotives of the series 26xx, 36xx, 37xx and 39xx opens. With a mouse click select the locomotive you want.



Through the „Filter“ you can reduce the list to represent only selected types of locomotives. For selection define „Group“ followed by a click on ***‘Search’***. You will see the selected group immediately in the list window at the.

Now click on the line in the list describing your locomotive; at the same time the picture is displayed at the upper right. Click on ***‘Transfer’***: Now you will be asked if you want to transfer the basic description from the database to your locomotive’s data.



The system changes to „Locomotive database“, and the picture appears in the picture box at the bottom. The small number written in the upper left corner of the picture represents the item number of the locomotive transferred from the picture database.

TIP!
Should you not own „Collection“ or „WiniCat“ and do not find your locomotive in this list, select a locomotive whose picture is very similar to the one you want to record. The same applies if you do not intend to scan pictures of your own into the Win-Digipet database.

5.2.2 Collection and WiniCat

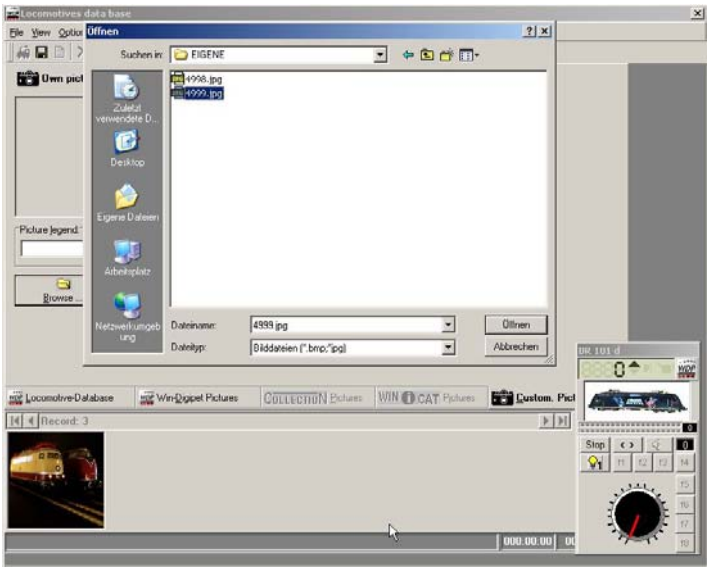
Under ‘COLLECTION-pictures’ and ‘WINICAT-pictures’ you will find locomotive listings and search functions as in index card ‘WIN-DIGIPET-pictures’. Follow the instruction as described in **5.2.1**.

The selected pictures are transferred to the WIN DIGIPET database, using ***‘Transfer’***.

5.2.3 Custom pictures

If you have already pictures of your locomotives or want to create them select the index card „Custom pictures“.

If you have already the picture of the locomotive stored on your computer, use the button **‘*Browse*’.**



Now can browse on your computer for the picture.

WIN-DIGIPET 9.0 supports pictures in the BMP- and JPG-Format. The picture shouldn’t be bigger than **200 kB**. If possible the pictures should have an aspect ratio of **5 : 2**.

For good results a size of 352 x 142 Pixel and a resolution of **72 dpi** are recommended.

After selecting a picture you can enter an individual caption for the upper left corner of the picture and **‘*Transfer*’** the picture to the locomotive database.

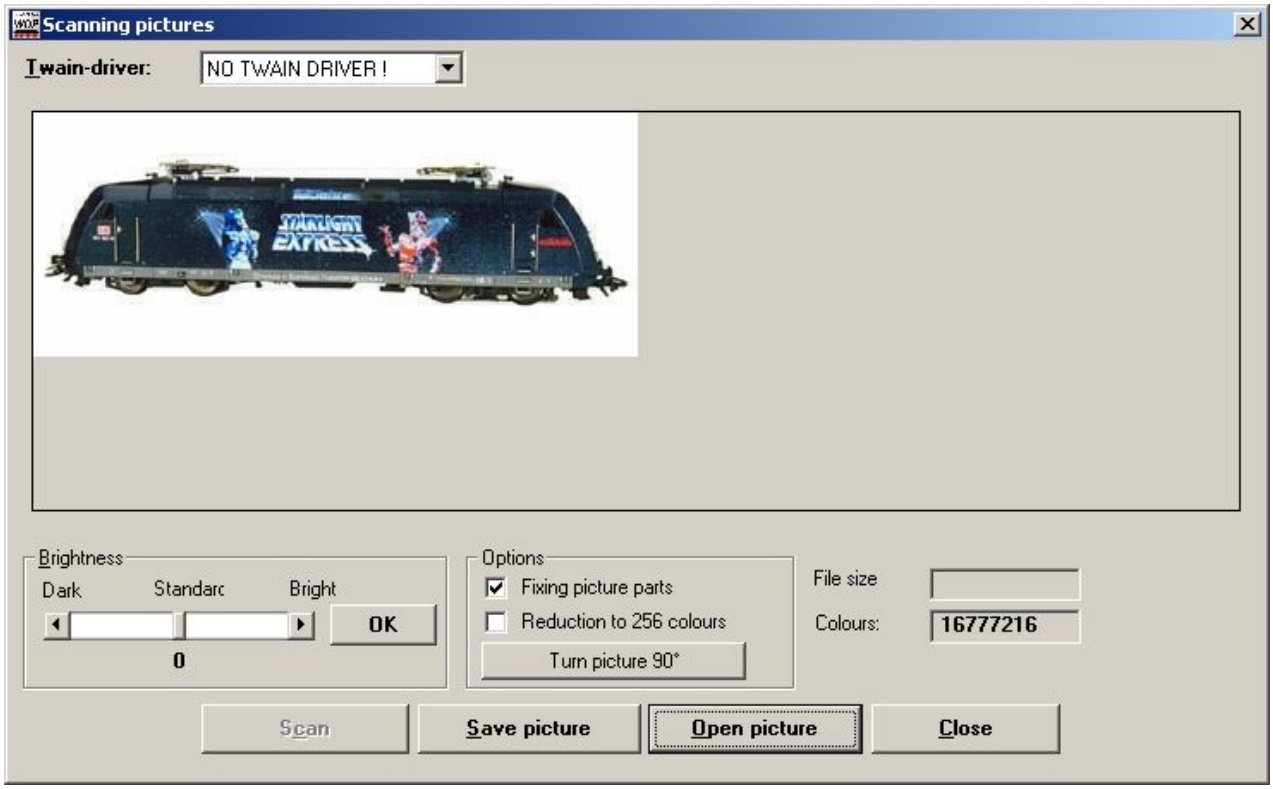
TIP!
In the field "Picture legend" normally "BILD0xxx" is preassigned by **WIN-DIGIPET 9.0** automatically, where "xxx" is the current ID No. of the locomotive to be registered in the database. The picture description is displayed in the picture on the top left and should not be too long.

If you delete the preassigned legend the program will write „No picture“.

If you want to edit the picture or want to scan a picture by yourself, this is also supported by **WIN-DIGIPET 9.0**.

You reach the window for scanning or editing your own pictures via <Options> - <Scanning pictures> (or via switch in the toolbar).

If you operate a scanner, a Twain driver has been installed with the scanner on your system. In the selection panel „Twain driver“ all possible and traceable Twain drivers are displayed. Select one of them.



To scan a picture, click on ***'Scan'***. Thus, the scanning procedure is initiated, and the typical opening picture for scanning appears.
Pictures should be scanned with **100-dpi max.**!

You can also display an existing picture in the window by clicking on '***Open picture'***. A selection window with file names and directories will be opened.

Search for your own scanned picture or an existing picture. Double click under 'File name' on it's, and „Scanning pictures" appears immediately in the window.

The brightness of the picture can be adjusted with „Brightness" using a slide controller; confirm with 'OK'.

Through ***'Fixing picture parts'*** you can mark – with the left mouse button pressed- a part of the picture frame. You can either store this picture part or reject it.

By ***'Rotate picture by 90°'*** you can change from landscape to portrait.

In „File size" and „Colours" the size of the file and picture quality are displayed.

Finally click on ***'Save picture '***; the window „Save picture" appears. Enter the former file name or a new one and click on 'OK' under „File name". Thus the picture is now saved on your hard disk.

Via ***'Cancel '*** you are returned to the main locomotives database.

Finally click on ***'Transfer'***: The system jumps to 'Locomotive database', and the picture appears in the picture box at the bottom

5.3 Index card „Locomotive-Database – Basic data"

On this index card you can enter the basic data of your locomotive.

5.3.1 Description, Class, Brand, Remarks

The panel „Description“ should contain a description of this locomotive; it is frequently fetched from the databases. You can also enter your own description, e.g. steam locomotive 38 2182 Prussian P 8. Up to 60 characters are allowed.

Next enter the class. Up to 8 characters are allowed e.g. BR 39.00 or E 10.1-3 or V 100.20 etc.

The panel “Brand” should contain the manufacturer of your locomotive. A maximum of eight letters is possible.

Some special characters which are used internally in the program are blocked automatically.

The field „*Remarks*“ can be used for any remarks concerning this locomotive.

5.3.2 Loco type and Loco sound

Here you can determine to which loco-/wagon type your train belongs. This list depends directly on your input, which you have done in the system-settings (chapter **4.9.3**). .

Here you can also select the length of your train: „*Short*“, „*Middle*“, „*Medium Long*“, „*Long*“ or „*Very long*”.

TIP!
You should select the train length according to the length of the rails in your stations or of your block systems.

You will find the same selection list in the routes-editor. There, you can determine, if individual routes are locked for specific loco-/wagon-types, respectively train length.

If you want to assign a **Loco-Sound to the locomotive**, you activate this sound here. This feature enables to combine a specific loco-sound to the corresponding loco-control.

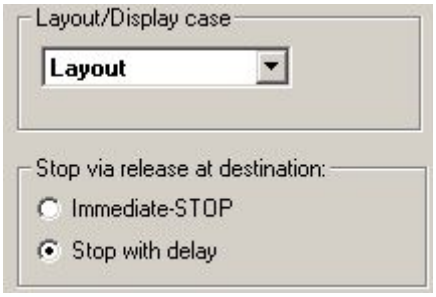
You can browse for a sound in every folder of your computer by **'*Browse*'**.

Select a sound: Immediately the sound-button will be activated in the loco-control (see **5.14**) and can be switched on and off whenever you want.

If you have defined a specific loco sound, it will also be available for the profiles and the automatic operations.

You can deactivate the loco sound by unchecking „*Activate loc sound*".

5.3.3 Layout/Display case, Loco-Stop



Here you determine by *„Layout/In display case"* whether the locomotive belongs to the bulk of not more than 200 locomotives actually operating on your layout.

Only locomotives of the category *„On layout"* will be activated and included for operation in the main program.

With the Radio-Buttons **„***Immediate-Stop*" / „*Stop with delay*" you can influence the reaction of the locomotive to a fulfilled release condition.

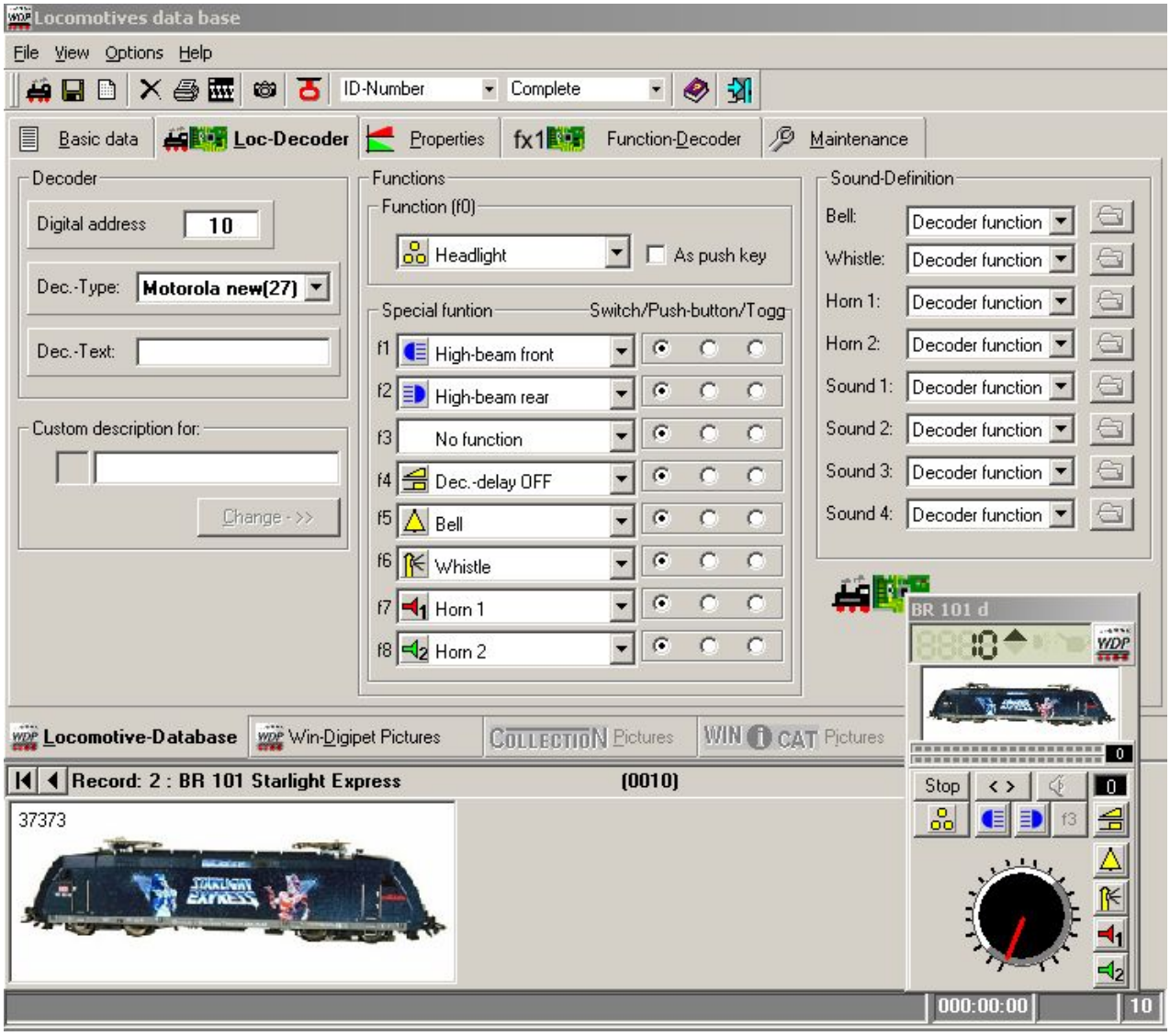
If you selected **„***Immediate-Stop*" the locomotive ignores the deceleration factor and stops immediately when the release condition is fulfilled.

Important!
This criterion is just taken into consideration when driving with the **Start/Destination-Function** and Standard routes in the tour and DC automatic and **not** when driving with Profiles or the timetable (see **10.2.2** and **10.2.3** resp. **11.2.2**).

This function has of course no effect to deceleration rate included in the locomotive's decoder.

5.4 Index card „Locomotive-Database – Loc-Decoder“

This index card is used to register the digital address, the decoder type and the function (f0) and the special functions (f1-f8).



5.4.1 Digital-Address

In the input field „*Digital-Address*“ you can enter the digital address of the locomotive.

This number is also used as train number by **WIN-DIGIPET 9.0**.

The different digital systems support locomotive address ranges:

- Märklin 01 to 80
- Lenz 2.0 01 to 99
- Lenz 3.0 01 to 9999
- Intellibox depending on the decoder type 01 to 9999.

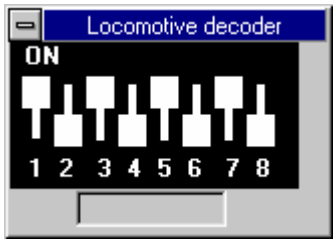
Important – only with Märklin-Digital-System:
Digital-Address **68** must not be used as it is reserved for internal use of the program.

Tip for DCC users:
For controlling analog locomotives the following systems use a fix address:

- Märklin Digital= : Address „80“
- Lenz Digital-Plus : Address „0“.

5.4.2 Display Loco-Decoder

You can view in a window the position of the 8 micro switches of the loco decoder of the loco you are controlling with the loco controller, when in **WIN-DIGIPET 9.0**. The window is opened via the menu <View> or using the switch in the toolbar or by clicking on the address of the locomotive in the loco control.



The digital addresses change on the locomotive and in the WIN-DIGIPET data, when you click on the switches. Invalid addresses set on the switches are flagged.

Only valid addresses of the Märklin-Digital-System (**1 - 80**) are correctly displayed. Addresses greater than 80 – as it is possible with the Intellibox – are ignored!

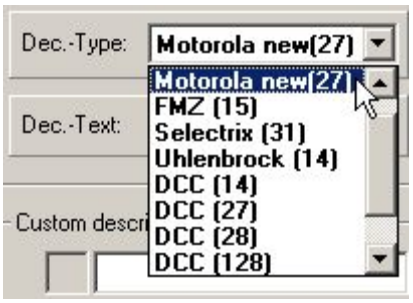
Double clicking on the title bar or clicking on the close symbol, close the loco decoder window.

5.4.3 Decoder-type, Decoder-Text, Custom description

The precise data about the decoder types is necessary and important for all functions and features of **WIN-DIGIPET 9.0:**

Click on the arrow near decoder type and a selection list will open. Select the decoder type which is installed in each of your specific locomotives.

The numbers in the brackets will show you the amount of different speed-steps.



You are able to select „FMZ“ and „Selectrix“ if you use the Uhlenbrock Intellibox or the Fleischmann Twin-Center.

For the Lenz-System you can select DCC (14), DCC (27) , DCC (28), DCC (128) and Old (Lenz). The “old” Lenz-Decoders were installed in former Arnold-locomotives for the DCC-System. If you have selected this type of decoder, speed step one will be transmitted if you turn. This decoders need speed-step one, otherwise they will not change their direction.

Attention!
If you make an upgrade to **WIN-DIGIPET 9.0** from a former version 5.0, 7.x or 8.x, you **must** re-enter all types of decoder for all your locomotives.

The input field „*Decoder-Text*“ is for custom use. For example you can enter here the decoder type and manufacturer.

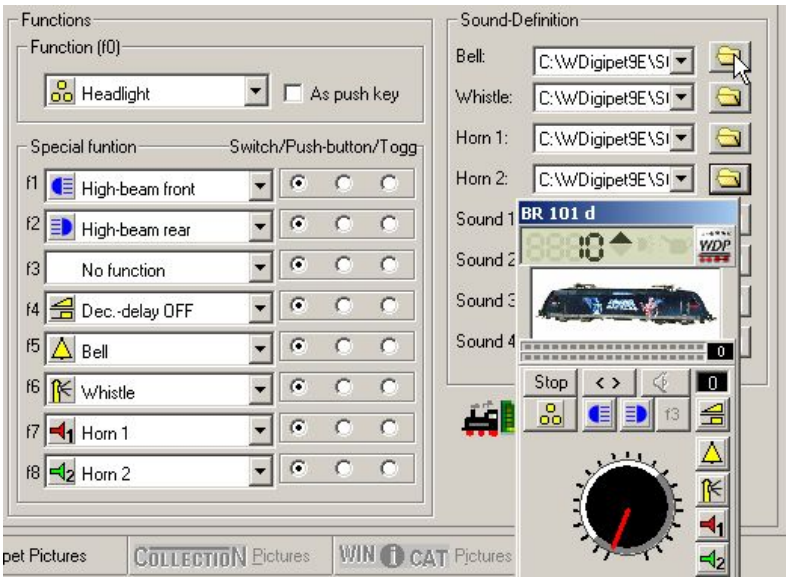
5.4.4 Functions, Sound definitions

This part of the index card gives the possibility to assign descriptive texts, icons and additional sound functions to the function (f0) and f1-f8 of the locomotive control.

Attention!
During the conversion of the old locomotive database the descriptions are transferred for functions (f0-f8) and are assigned to the icon for "Miscellaneous". Only activated functions are converted.

After the conversion you should select the proper icons for the function and the special functions f1-f8.

Furthermore you can assign sound files which can be played using the PC sound system in case the locomotive has no own sound generator.



The Loc-Function (f0) – in most cases the headlight – can be selected using the list window (click on the small arrow).

In case f0 is a telex coupler you should also select „*As push key*“ , otherwise the telex would be activated permanently.

The push button time can be set in the „System settings“ (see **4.9.2**).

The special functions f1 to f8 can be defined accordingly.

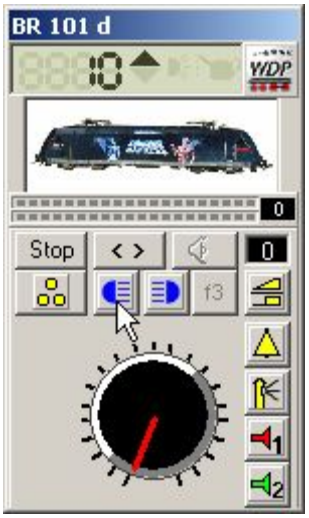
For the special functions f1 to f8 you can choose between the options „Switch/Push-button/Toggle“.

Let’s explain Switch/Push-button/Toggle:

- With a **Switch** you switch the function with a first click on and with a second click off.
- A **Push-button** is used to switch the function with one click on and it is automatically switched off after a predefined time (see **4.9.2**) e.g. Telex.
- The **Toggle** mode is similar to the push-button mode, but here the time is set fix to 1sec.. This mode is necessary for some new sound decoders. These decoders play the sound when switching the function on also when switching off. The only possibility to play the sound only once is to switch the function on and off again within 1 second. But this time would be too short for a Telex, which needs in most cases 3 sec.. To avoid this dilemma we suggest to set the push-button time in the system settings for example to 3 sec. and use the Toggle mode for the new sound decoders’ resp. the push-button mode for the Telex.

The function and special functions of the locomotive can be directly tested with the locomotive control.

Furthermore you can assign sound files which can be played using the PC sound system in case the locomotive has no own sound generator or add additional sound functions to your locomotive (e.g. your locomotive has only sound functions f1-f4).



The list fields in the box “Sound definition” give you the possibility to choose whether to switch the functions of the locomotive decoder or play a sound file when activating special functions with the program.

For example: when selecting a sound file for the bell function and the bell function is assigned to f5 (see picture), an activation of f5 would result in playing the sound file using the PC sound system instead of activating f5 of the locomotive decoder.

When staying with the mouse cursor over the buttons of the locomotive control a tool tip shows you the description of this function. Unused functions are displayed with grey text.

TIP!
You can change the predefined descriptions for the several icons using the input box “Custom description for”. With a click on **‘*Change ->>*’** the entered description is transferred to the last selected icon/function selection list.

Important!
Some of the Märklin-/Trix and Roco functionality models have to be registered as a locomotive; then they can be easily controlled by **WIN-DIGIPET 9.0**.

These are:

- The former digital-special-functionality wagons from Märklin:
  - **Panoramawagen** (4999, fix address 10)
  - and **„Tanzwagen“** (“dance-wagon”; 4998, fix address 20)
  - Pictures can be found in the WIN-DIGIPET-directory, as well (\Eigene\4999.bmp and \Eigene\4998.bmp).
- The crane models from Märklin
  - Goliath
  - Digital-Crane (turntable, 7651, 16 addresses adjustable)
  - and Portale crane 76500.
- The crane model from Trix
  - Portale crane 66105 (similar to Märklin 76500).
- The crane models from Roco
  - Portale crane
  - and train crane.

They can be controlled by the locomotive control.

5.5 Index card „Locomotive-Database - Properties“

On this index card you register the important data of the locomotive. This are the settings for minimum/maximum rated speed forward and backwards, the deceleration and acceleration rate as well as the starting speed and the current direction.

Important notice!
If you have upgraded from a former version 5.0 or 7.x to **WIN-DIGIPET 9.0** you have to check or register completely new all explained functions in this section for all locomotives.

When updating from version 8.x all settings are transferred and you can adjust the new feature of differing between “forward/backwards” and “acceleration/deceleration” if you want.

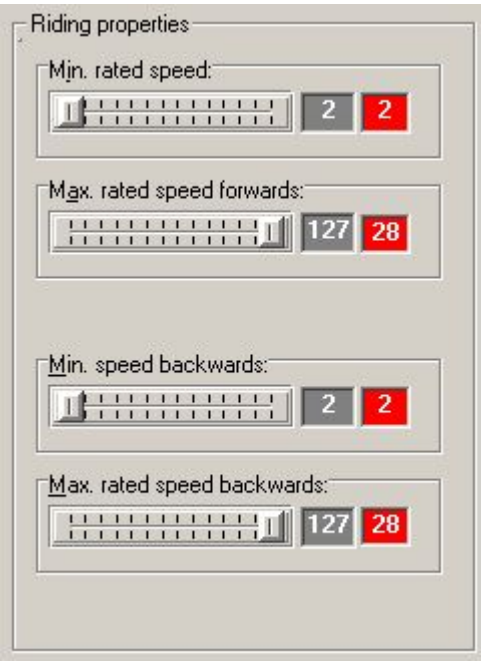
You can adjust the running properties of the locomotive with the sliding switches.

All speed-adjust-ranges are divided in **128** steps. However the amount of speed-steps is depending on the type of decoder, which you have selected (see **5.4.3**, numbers in brackets).

5.5.1 Riding properties

Under “Running properties” you register the amount of steps for “min. rated speed” and “max. rated speed”; in the red panel on the right hand side, you will find the ordinal number to the related speed-step.

In Version 9 you can now differ between backwards and forward direction for the speed settings.



In this example, we have a view on a decoder for Märklin-locomotives with the new Motorola-data format. This decoder has 28 speed-steps, which are – like for all decoder-types – divided into 128 steps. In this example the values for forwards and backwards are the same.

For the “min. rated speed” we have selected the amount of steps “02”, for the “max. rated speed 127”. On the right hand side, you will find the speed steps “2” respectively “28”.

These figures will be automatically calculated by **WIN-DIGIPET 9.0** and will be represented like in this example.

Minimum rated speed determines at which speed the locomotive just moves and does not stop, e.g. step „2“ for easy moving, step „4“ for „stiffer“ moving locomotives.

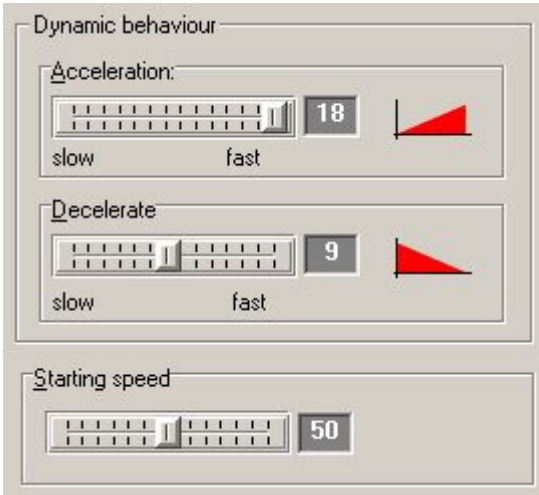
Maximum rated speed determines up to which speed the locomotive may be accelerated without derailing in curves, e.g. „11“ = top speed.

5.5.2 Dynamic behaviour

You can differ between the acceleration and deceleration rate.

Acceleration: The acceleration rate determines whether the locomotive is accelerated fast or slow.

Deceleration: The deceleration rate determines whether the locomotive is decelerated fast or slow.
It is recommended that you test your locomotives on your layout to find the best values of minimum/maximum rated speed and acceleration rate.



Starting speed : With this slide you select speed which is used when driving "Standard"-routes.

We suggest a value between **50** and **70** for most cases.

You can select starting speed percentages between 0 (%) and 100 (%) in steps of five percent.

Click in the panel „Starting speed" at a percentage adequate for the locomotive concerned, e.g. 50 **(= 50 %)**.

For example: If a maximum rated speed of 10 was recorded and a minimum rated speed step of 2, this locomotive will start moving with speed step **6**.

This can be calculated by:

- Max. rated speed **10** minus Min. rated speed **2** = **8**
- 8 times 50 % = **4**
- 4 plus Min. rated speed **2** results
- in the starting speed step **6**.

Important!
If you set the value to **0%**, all commands to start, for all automatic operations, will be ignored for this locomotive.

If you want to move a locomotive via its **train number** (= digital address, see **5.4.1**), in the operation modes "Automatic with Demand Contacts" or "Switch + Ride- function" (see **12.3**, **18.5.1-B** or **18.16**) or the tour automatic (see **18.17**), you **must** enter a starting speed **greater than "0"**. Referring to this starting-speed, the locomotive starts to move from its start contact within the operation modes "Automatic with Demand Contacts", tour automatic and "Switch + Drive - Function".

Therefore the adjusted **starting-speed** shall not be **too low**, otherwise the locomotive does not move, even if it has received a start command. (see chapter **8.7.3**).

5.5.3 Driving direction

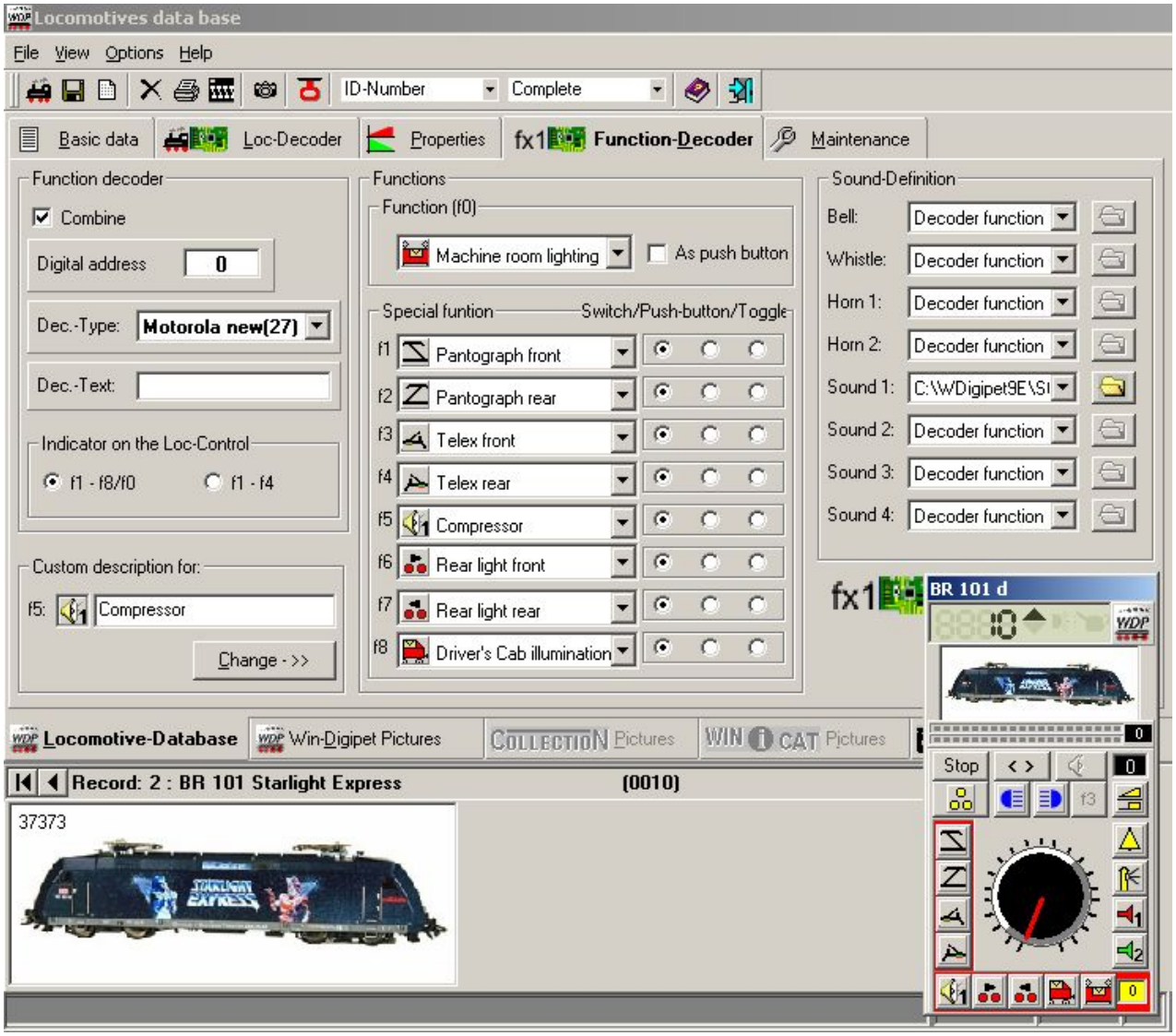
WIN-DIGIPET 9.0 stores the direction **of travel** of the locomotive. In the panel „Direction" enter the present direction of travel, i.e. forward or reverse. You have to do this once only: after a direction test of the locomotive. The program „remembers" the direction of travel, displays direction changes and saves it when the layout is switched off.

In the top line of the locomotive control panel, the direction of travel of the locomotive is displayed next to the digital address: red/black arrow to the top = forward, red/black arrow to the bottom = backwards.

If this indication is wrong, pick up the loco from the track, use the reversal command and put the loco back on the track again.

5.6 Index card „Locomotive-Database – Function-Decoder“

This index card is used to define all relevant data for function decoder which can be assigned to the locomotive.



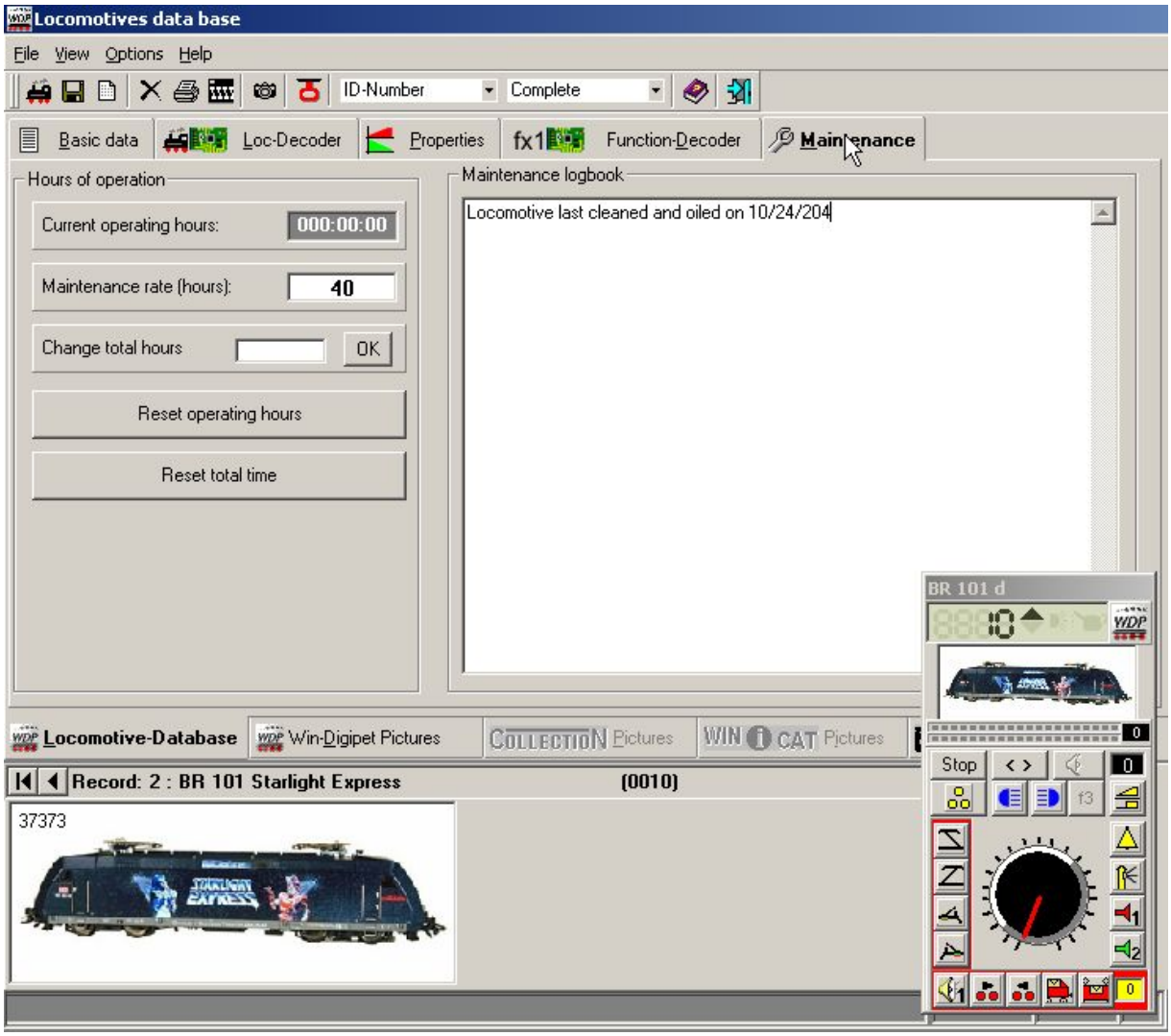
All data can be entered similar to the normal locomotive decoder and will not be explained in detail again.
Just enter the „*Digital-Address*“ of the function decoder, check „*Combine*“ to activate the function decoder and select whether to use only „f1 – f4“ or „f1 - f8/f0“ for this decoder. This selection influences the size of the locomotive control. The last line of the control will be deactivated if you select just „f1 – f4“.

TIP!

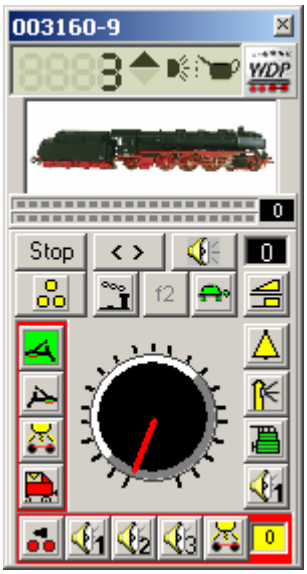
If you don't have a function decoder installed in your locomotive but want to assign some additional sound files to your locomotive (see **5.4.4**), just check *"Combine"* and enter "0" as digital address. Now this function decoder can be used as "sound-file-only-decoder".

5.7 Index card „Locomotive-Database – Maintenance"

This index card can be used to register all maintenance data for your locomotive.



Current operating hours



If the hours of operation (display = hours: minutes: seconds) exceeds the pre-set maintenance interval, a **small oil can** or appears in the big Loco-Control (see **5.14**) to the right of the speed control. The locomotive is also displayed in the bar „Loco selection“ and the locomotive monitor (see **18.11.1**) of the main program. **A yellow marking** alerts you.

Maintenance rate

Here, you can also adjust the maintenance interval; the range is between 1 hour up to 100 hours.

Change total hours

In this field you can change the operating hours. This is e.g. useful if you know the number of hours from other recordings and register the locomotive for the first time **in WIN-DIGIPET 9.0** and like to take over these setting.

Reset operating-/total hours

After maintenance (lubrication) of the locomotive, use the button „Reset operating hours“, to reset the counter to **000:00:00**. The hours of operation since the last maintenance are added to the total hours of operation = „Live expectancy of locomotive added to the field „Total hours“ (Display = hours: minutes).

With a click on “Reset total time” you can reset the display back to **0000:00**.

Maintenance logbook

Here you can enter all data and remarks concerning the service of the locomotive. It would be conceivable here e.g. to enter the data of a general overhaul, repairs of the locomotive etc..

Display of operating hours, total hours and maintenance rate

These three values are also always displayed in the lower left corner of the “Locomotive database” window.

5.8 Save

Finally click on <File> and <Save> or in the toolbar on the switch . The locomotive and its picture are saved in the WIN-DIGIPET-data base.

After saving the command <File> <New> and the button are activated again and you can register the next locomotive.

5.9 Locomotives test

The recorded locomotive can now be tested. Use the loco control at the top right hand of the screen.

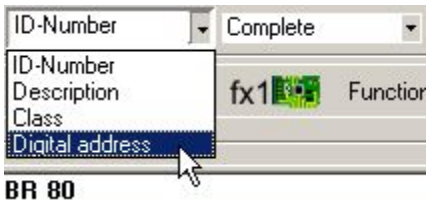
You should carry out this test using different speed steps to get good values for the properties of the Locomotive (see **5.5**).

For the determination of the maximum speed according to section **5.5.1** you should also make speed measurements according to section **18.13.7**.

5.10 Delete data records

Click on <File> - <Delete> or on the switch in the toolbar if you want to delete a locomotive from the database. The record displayed in the window is deleted. A warning is displayed prior to deletion.

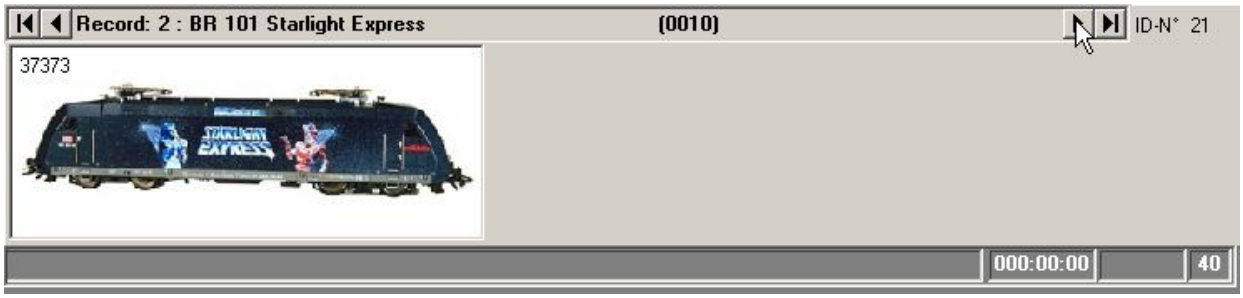
5.11 Sort data records



In the upper menu-bar you have the opportunity to sort by “ID-number”, “Description”, “Class” or “Digital-address” via the list arrow. This kind of sort will also be taken to consideration within the loco-panel in the main program. Furthermore you can limit in the field *"Complete"* located on the right of it the assortment to the locomotives with the location *"Layout"* or *"Display case"*.

After changing of the sorting all locomotive tractions will be deleted automatically and have to be reassigned.

5.12 Browse, Loco-List, change data files



The „Browse“ - function in the lower screen allows you to browse through data files using mouse clicks:

= Back to the first record

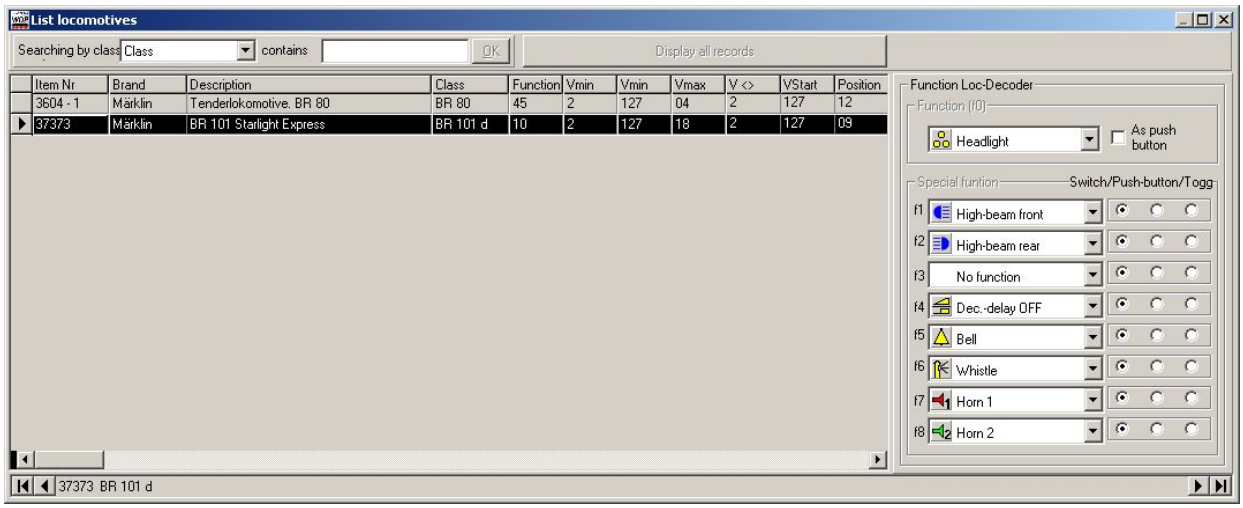
= One record backwards

= One record forwards

= Forwards to the last record.

A **list** of all recorded **locomotives** is available via <File>, followed by a click on <List> or in the toolbar using the switch .

Here you can **edit the records**.



You can search in the „List of all locomotives“ in the following categories...

- ID-Number
- Class
- Description and
- Digital number

Enter the search-text, click on ***'OK'*** or push the return-key on your keyboard. You will get a message, if no locomotive has been found after the search has been performed.

To display all data after a search function, click on ***'Display all records'***.

With a click on a line of this list, this locomotive will be shown immediately in the locomotive-database and its data will be indicated as well.

In the " List of all locomotives“ you can edit the data in the suitable rows of the list. Click on the desired column. In order to edit **WIN-DIGIPET 9.0** offers two possibilities which depend on the respective column.

- First click in the column - column is selected. If you click again, an input cursor appears for overwriting.
- First click in the column - a choice arrow appears and after a click on this a small list box in which you can choose the options appears.

Important!
Not every column of the list can be edited. Use then for changing of this data the normal editing possibilities in the locomotives database .

To save changes, click on a different line.

A „Browse“ function is available at the bottom of the locomotive list, containing the same functions as explained above.

To close the list, double click on the WDP-Symbol to the left of the window header.

5.13 Emergency Stop

At any point of the program you can perform an emergency stop by pressing the function key **F9** of your computer.

You can reach the emergency stop also via <Options> - <Emergency stop> or the switch in the toolbar .

You have got two options to continue after an emergency stop:

- *„Start slowly to last stored speed “.*
  All locomotives will be adjusted to their last stored speed with their registered acceleration delay.
- *„ Stop all locomotives “.*
  If you click at “OK”, all locomotives will be stopped and you have to control their speed manually again .

For more details see **18.12.1** and **18.12.2**.

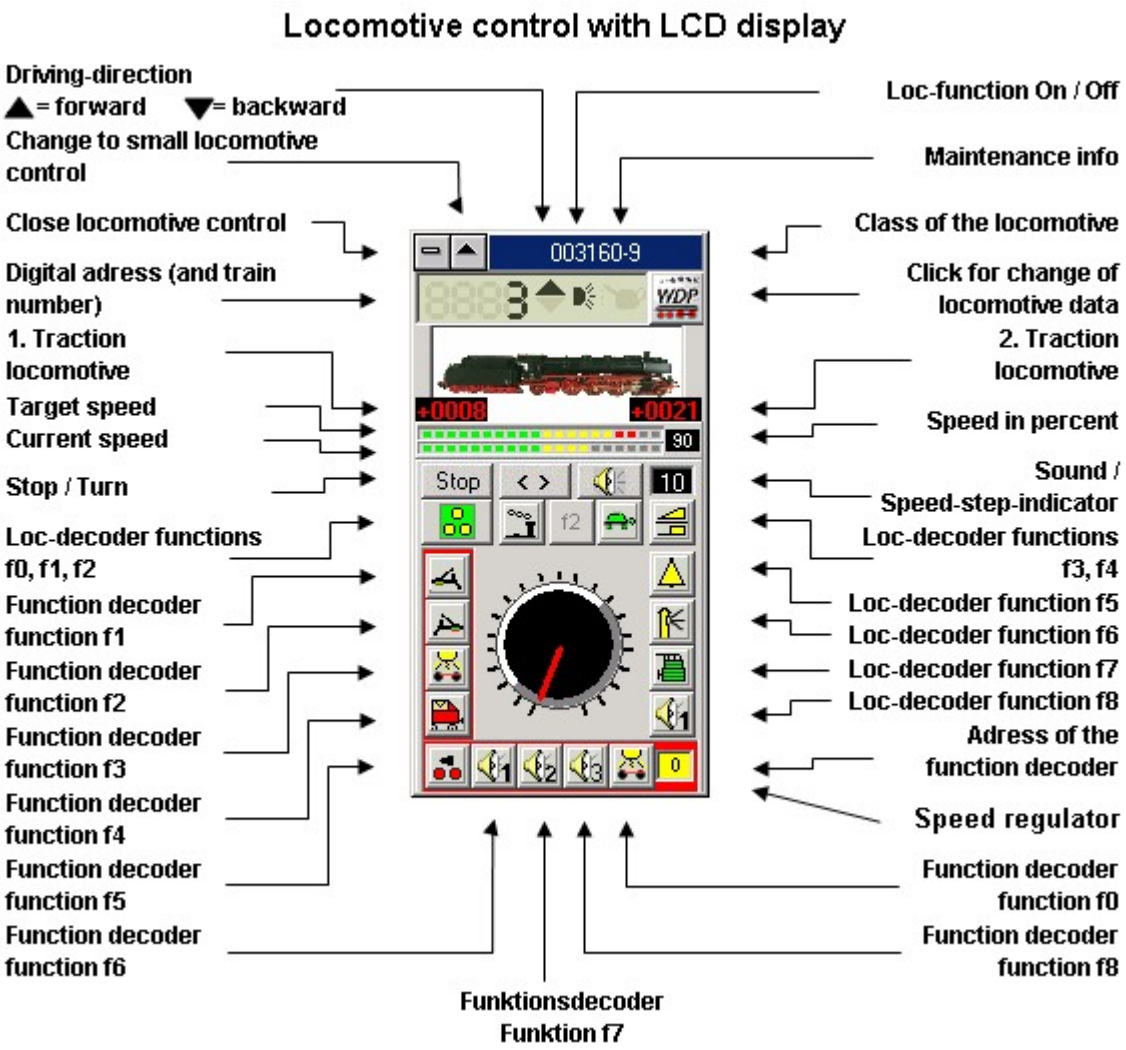
Important tip!
If you stop many locomotives with the command „*Stop all locomotives* “, this will last a certain time until all locomotives have received the command and stopped. It is often better to stop the locomotives affected by a possible crash directly using the digital control of your digital system (locomotive number, driving step 0, Go and again Stop for every locomotive) and then issue the command „*Stop all locomotives*“ using **WIN-DIGIPET 9.0**.

5.14 Locomotive-Controls („Maxi“ ,“Mini“ or „Micro“)

WIN-DIGIPET **9.0** offers three different sizes for the locomotive controls:

- Big locomotive control „Maxi“,
- Small locomotive control „Mini“
- The Locomotive-Monitor („Micro“), that needs very few space on the screen and is therefore a good alternative to arranging several locomotive controls.

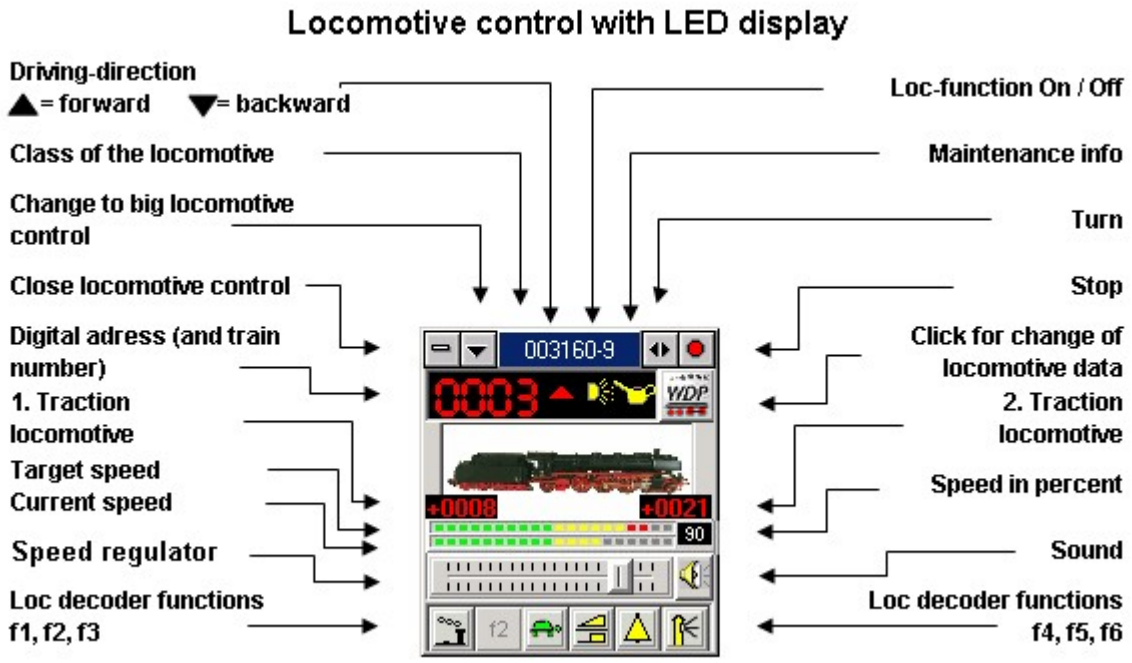
5.14.1 Big locomotive control („Maxi“)



With a double-click on the title bar you change the size between the big and the small version.

The displayed icons in the locomotive control depend on your setting in the locomotive database (see **5.6**). The last row with the functions f5 to f8 and the address of the function decoder are only displayed, when you selected „*f1 - f8/f0*“ in the function decoder settings.

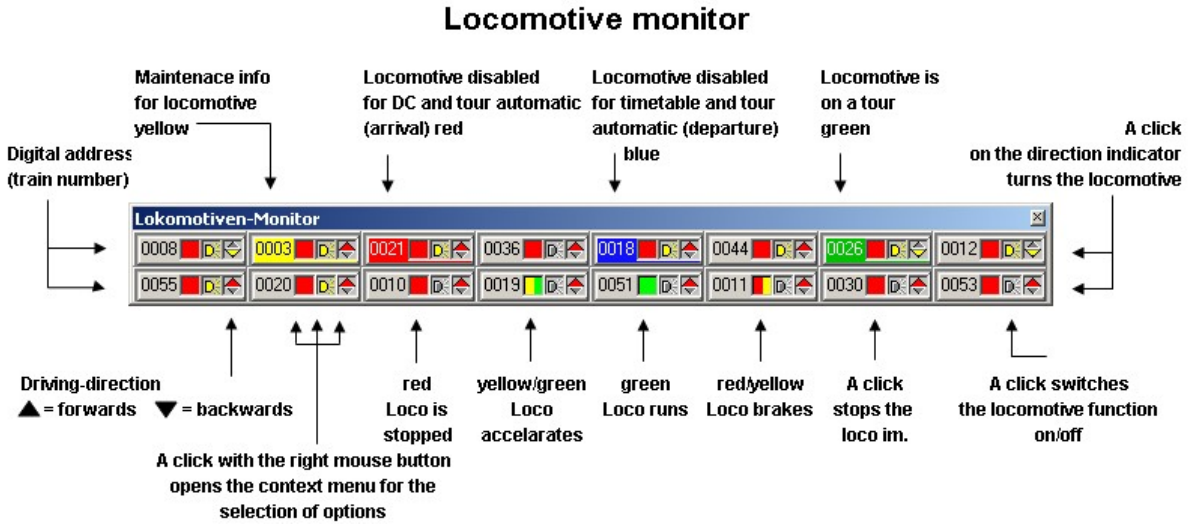
5.14.2 Small locomotive control („Mini“)



In the small locomotive control the icons of the possibly built-in function-decoder are **not** displayed.

5.14.3 Locomotive-Monitor („Micro“)

The Locomotive-Monitor („Micro“) can’t be opened from the locomotive database , but will be explained here also for reasons of completeness.



If you float with the mouse about the monitor, the pictures of the corresponded locomotive is displayed if you have enabled this function.

By a click of the speed-indicator-field (Locomotive running, accelerating, decelerating and stopped) the locomotive is stopped. With clicks on the function symbol or the direction arrow the function can be (de-)activated resp. the direction changed.

You can just stop a locomotive with the Locomotive -Monitor, for further controlling of the locomotive click on the digital number of the locomotive to open the locomotive control.

The locomotive controls and the Locomotive-Monitor can be moved to every position on your screen(s). For moving a control or the Locomotive-Monitor click the title bar, hold the left mouse button, drag it to its new position and release the left mouse button in the new position (Windows – drag & drop). When closing and reopening them they will be always displayed at the last position.

The Locomotive-Monitor offers a great opportunity to get an overview over all locomotives (Locomotive running, accelerating, decelerating and stopped). You can even see if a locomotive needs maintenance.

5.14.4 Usage of the locomotive controls

The illustrations explain all functions. All commands are issued with mouse clicks. To set the rated speed, click on the relevant speed step on the graduated dial/ slide scale, or drag –with the left mouse button depressed- the dial pointer/ the slide button from zero to the desired speed.

Alternative you can also send commands via the keyboard of your computer, for the following functions, if the locomotive control is selected (blue title bar):

Arrow **right** and arrow **up**	=	increase speed
Arrow **left** and arrow **down**	=	decrease speed
Key **end**	=	accelerate to top speed
Key **POS 1** and **space**	=	Stop
Key „**D**“ and key „**R**“	=	change direction
Key „**F**“	=	Loco-function on/off
Key „**S**“	=	Loco-sound on/off
Keys „ **0**“ to „**8**“	=	Special functions F1 to F8 on/off

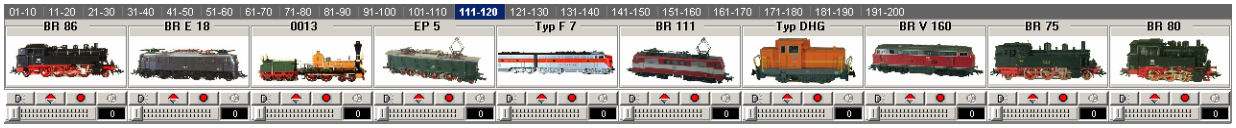
Further keyboard command for the locomotive controls are available in the main program and are explained in section **18.11.3**.

Details on the maintenance display, see **5.7**; please do not forget to reset the operating hour counter after maintenance of the locomotive to **000:00:00**. On Multi-**Traction** see **18.11.7**.

A loco control can be moved anywhere on the screen. Click on a title bar, hold the left mouse button, drag it to its new position and release the left mouse button in the new position (Windows – drag & drop).

The locomotive will stop immediately, if you change to browse in data files (see **5.12**), during a locomotive test run.

5.15 Loco selection, Quick loco bar



The loco selection and the quick loco bar are only available in the main program part of **WIN-DIGIPET 9.0**. Max. **10** locomotives are recorded – similar to an index card- for faster access. The index card is automatically updated when new locomotives are added/deleted or they are temporarily put into 'Display case'.

A click on the index card, above the picture, displays the locomotives for your selection. You can not open locomotive controls or control locomotive for locomotives that are part (second and third locomotive) of traction.

You can (de-)activate the loco selection via <Loco selection> - <Locomotive bar>. And if the loco selection is activated you can (de-)activate the quick command bar via <Loco selection> - <Command bar> .

You can change this bar via <Loco selection> - 'Position' or in the toolbar 'View loco bar'.

There you can select: <Horizontal bottom> or <Horizontal top> or <Vertical left> or <Vertical right> .

Through <Loco selection> - <View> you can change the kind of display in the picture panels: <Pictures only> or <Text only> (these are class designations) or both: <Pictures and text> .

It is possible that the locomotive selection bar becomes very small, if the screen resolution is set high. You can adjust the locomotive bar with <Adjust height of locomotive bar> or <Adjust width of locomotive bar> . This is done in 6 steps to your own taste.

5.15.1 Usage of the quick loco bar

The quick loco bar is normally controlled with the mouse. Therefor just click on the according function buttons (function(f0), change direction, stop and sound). To set the rated speed, click on the relevant speed step on the graduated slide scale, or drag – with the left mouse button depressed- the slide button from zero to the desired speed.

After the **first** click on the quick loco bar of a locomotive, the speed of the locomotive can also be controlled by keyboard.

Arrow **right** and arrow **up**	=	increase speed
Arrow **left** and arrow **down**	=	decrease speed
Key **end**	=	accelerate to top speed
Key **POS 1** and **space**	=	Stop

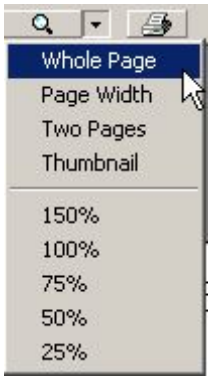
5.16 Printing locomotive data base

Via <File> - <Printer> you reach the window to input your printer data. Acknowledge with ***'OK'***.

Click on <File> - <Print> or on the switch in the toolbar to print a record. The window „Print locomotive data base“ appears.

The possible functions are self-explanatory. All commands will be entered by mouse. In the beginning, all locomotives will be shown – depending on how you sorted them – as single pictures on forms in portrait format.

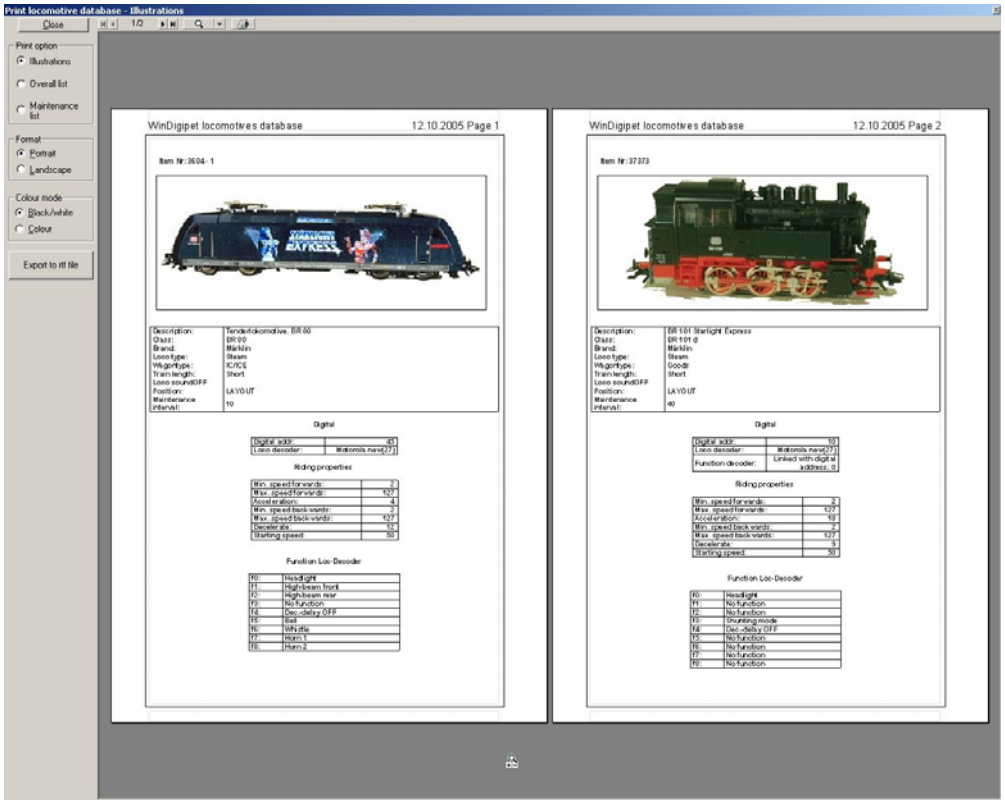
You may also arrange these single pictures on forms in landscape format.



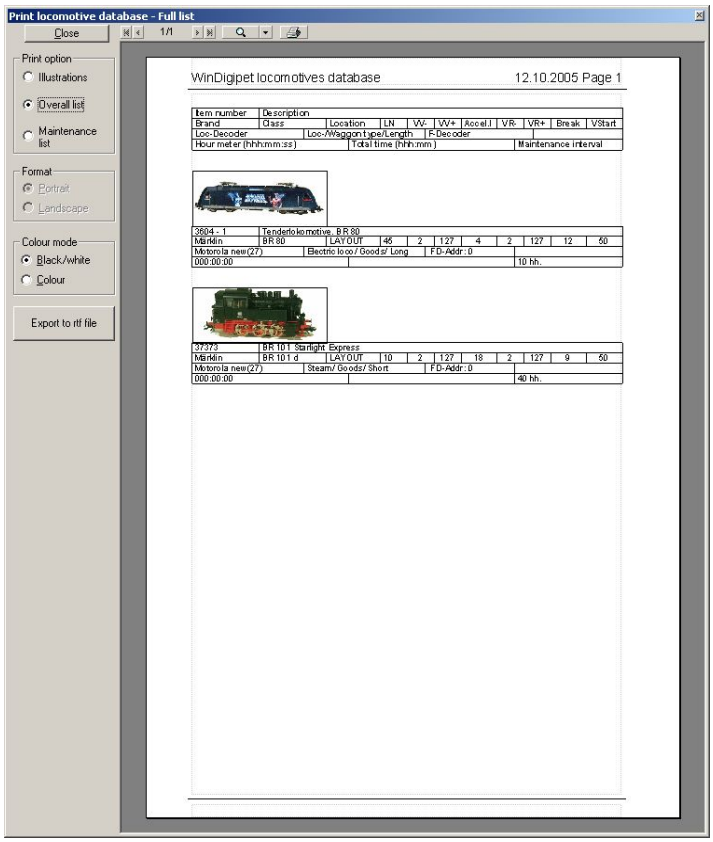
At the top edge of the screen, you will find a list arrow next to the magnifying glass for several options to view the printout.

These options are self-explanatory.

If you make no changes **WIN-DIGIPET 9.0** uses automatically the option <Two Pages>.



You will get an overall list with all locomotives and all illustrations, when you click on ***'Overall list'***.



The switch ‘Maintenance list’ will print a complete list of all locomotives which are in a queue for maintenance.

With a click on the symbol at the top of the screen, you start the printout.

‘Close’ quits the printout.

5.17 Closing locomotive data base

Close the loco database either via ‘File’ - ‘Exit’ or click on the ‘Close’ symbol in the top right hand side or double click on the WIN-DIGIPET symbol in the top left-hand side or on the switch .

The program updates the „Loco select“ bar in the main program (see **18.11.1**) and the train number display in the track diagram (see **18.14**). The displays „Update locomotives“ and „ Update train number display“ inform you about the process.

When you close the locomotive-database, all changes within the locomotive-database will be corrected in the main program.

The locomotive selection bar in the main program will also be updated, if you have put some locomotives into the “showcase” or if you have changed the sorting of the locomotives.

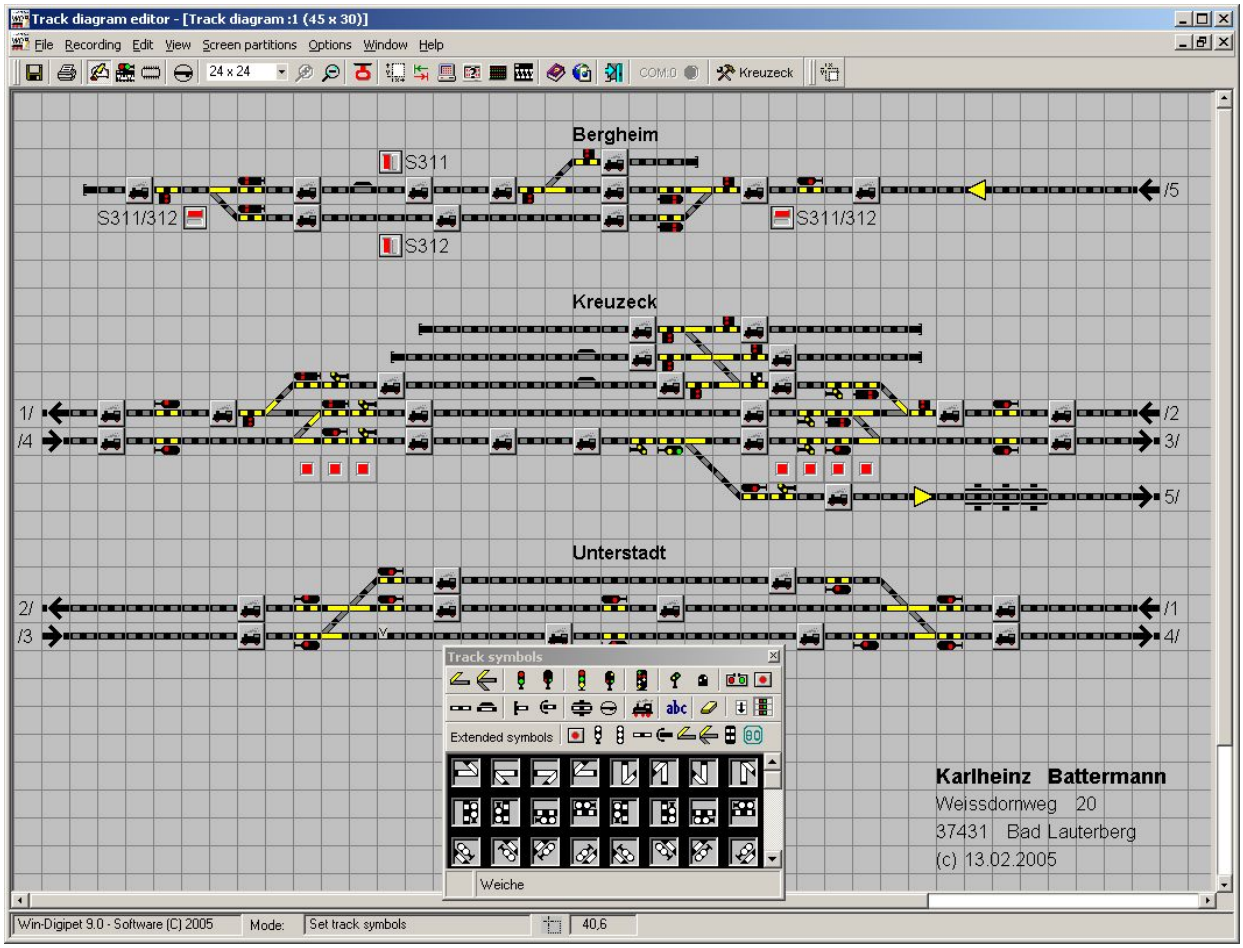
Furthermore all train number displays in the main program will be automatically updated and corrected even in case of changes.

6 – TRACK DIAGRAM EDITOR

6.1 General

In the track diagram's editor you create an image of your railway tracks and this must not be scale.

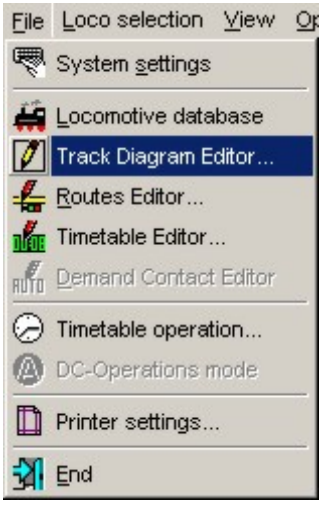
In the following you see an alternative track diagram as it would be used by the German Railways, because they do not use circular track diagrams.



Very well the single block systems (from signal to signal) can be seen here.

After you have registered your system configuration and locomotives, you can now create your track diagram.

Therefor click on the menu command <File> <Track diagram editor> or on the symbol in the toolbar.



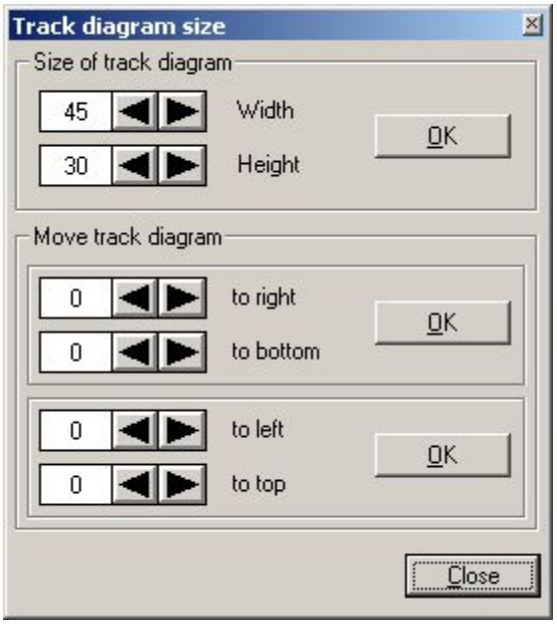
6.2 Track diagram window

At the first start of the track diagram editor an empty track diagram appears.

A track diagram size of **50** symbol panels horizontally and **30** symbols vertically = 1500 symbol panels in total is set as default.

With the menu command <Options><Track diagram dimensions> or with a click on the switch in the toolbar, you can define, how large your track diagram should be.

Under „Track diagram size“ you can vary between **20** and **250** symbol panels in horizontal and **20** to **250** in vertical arrangement.



Confirm with **'*OK*'**.

Under „Move track diagram“ you can move a complete recorded diagram to all directions in dual steps. Already registered routes will automatically be corrected after movement. However **“add-on-switching”** and **“switching conditions“** have to be adjusted manually.

Confirm with **'*OK*'.**

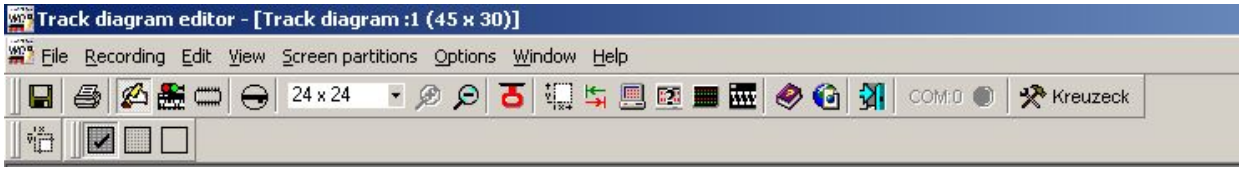
After moving the track diagram a security message will occur before you save.

If you have already registered a track diagram, it will be automatically displayed after starting **WIN-DIGIPET 9.0**.

6.2.1 Toolbars, status bar

Below the menu bar the **toolbar** of the track **diagram editor** appears. It is similar to the toolbar of the main program (see **3.7**) with one exception: toolbars can not be customised in this program part.

Three toolbars are available: a main toolbar, a toolbar for track diagram sections and one for the grid selection. At the start, the toolbar for the grid selection is not visible.



In the **status bar** at the lower screen edge you see the mode in which you are at present, next to it the x- and y-co-ordinates of the mouse pointer the track diagram.

You can mask the toolbar, either by <View> or with the right mouse button through the corresponding short menu.

6.2.2 Selecting different grids

Three different alternatives are available: <Lines> (a network), <Dots> and <No grid>. With „Lines“ it takes some time to display the track diagram as the program has to do a lot of drawing.

You reach the grid setting via <View> - <Grid> or by the right mouse button through the short menu <Grid> or via the toolbar <Grid settings>. 

6.2.3 Splitting the track diagram window

Click on <Window> - <Split> in the menu bar. First you see two identical track diagram halves on the screen. You can now place track symbols into various positions and work on sections.

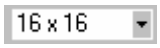
If you want to return to the normal track diagram mode, click again on <Window> and again on <Split>.

6.2.4 Enlarge and Reduce(„Zoom”)

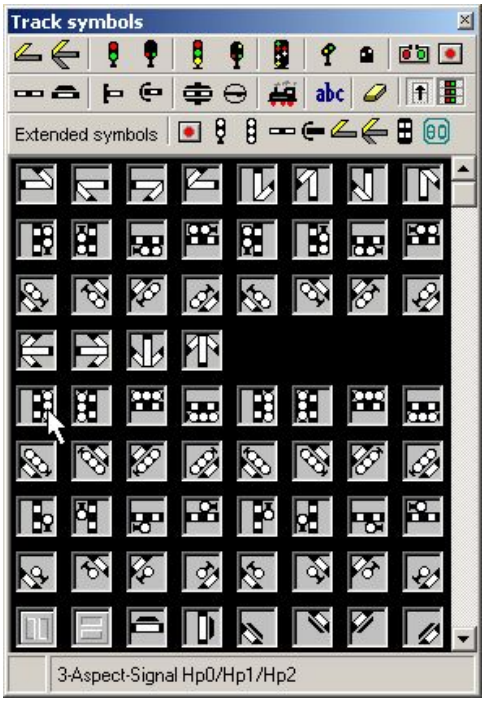
Four steps are available:

- 12 x 12 pixel (small)
- 16 x 16 pixel
- 20 x 20 pixel
- and 24 x 24 pixel (large).

You reach the zoom setting of the track diagram via <View> - <Zoom plus/minus> or by the right mouse button through the short menu <Zoom plus/minus> or the magnifying glass symbols  in the toolbar.

You can also select the zoom by clicking on the arrow next to the text display of the zoom size. 

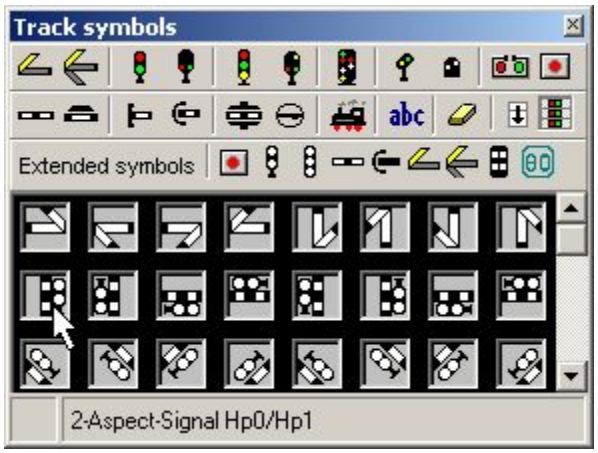
6.3 Track symbols window



If you want to create a track diagram for your model railroad layout, you have to check first whether you have not chosen the symbol table "Sym_Auto" in the system settings according to section **4.8.5**.

At the top of this window you see a toolbar of two lines with the types of symbol groups. When you point with the mouse pointer to an individual group panel, a „Quick info“, on a yellow strip tells you what the panel stands for.

If you click at a group symbol, the track symbols belonging to that group are displayed below the toolbar.



When you rest on an individual symbol the explanatory text in the bottom window tells you what the symbol is/does. The example shows a two position signal for right hand traffic.

With the signals the signal accepts are displayed, in addition, in the lower text line.

The vertical scroll bar gives you access to all **628** icons. Available are beside the rail tracks, turnouts, buffer stops, tunnels, bridges, turntable icons, switches and push-buttons also the signals for right- and left-hand traffic as mechanical signals or light signals.

Also icons for the train number tracking on long distances, icons for level crossings, locomotive shed gates, direction arrows, different icons for the representation of a locomotive shed or the signal icons for the model railroad user in Switzerland are available etc..

You can alter the track symbols window in its height:

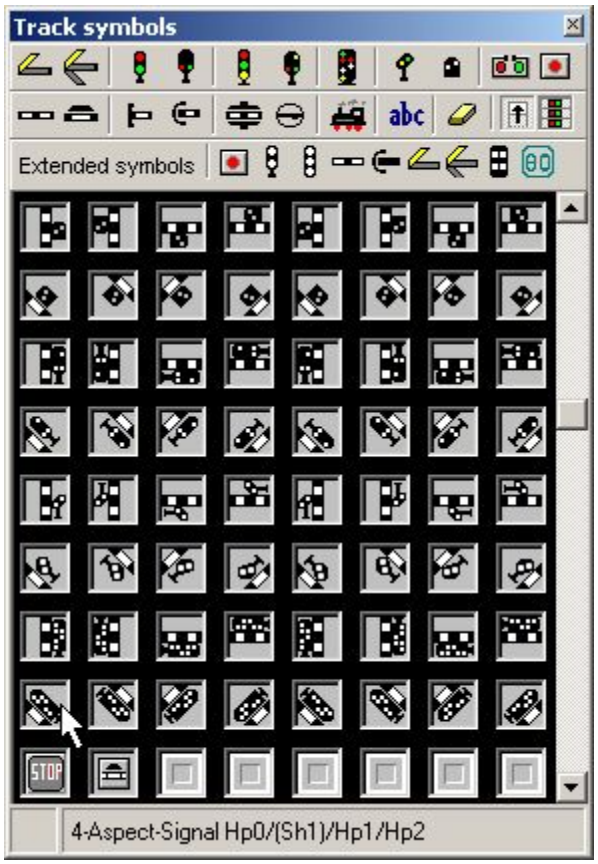
- Click on the second symbol line on the right on the left switch , to enlarge
- or on the right switch , to shrink.

With the **enlarged symbol selection** you can select more symbols without scrolling.

If you want to see the extended symbol selection click on the symbol and get a bigger selection as shown in the window.

For better viewing, you can **mask** the track symbols window (Symbol on the right side of the title bar.).

To **bring it back**, use menu <View> - <Track symbols> or with the right mouse button: short menu <Track symbols>.



Besides, the view of the icon choice also depends on your choice from the 11 symbol tables.

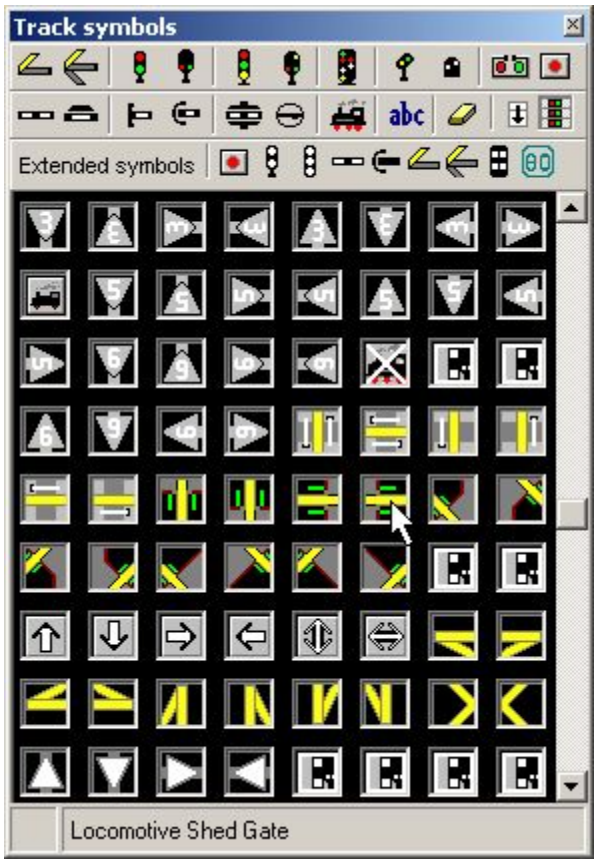
In the right picture you see e . g. the icons from the DB symbol table.

An icon was selected here for drawing of a locomotive shed gate.

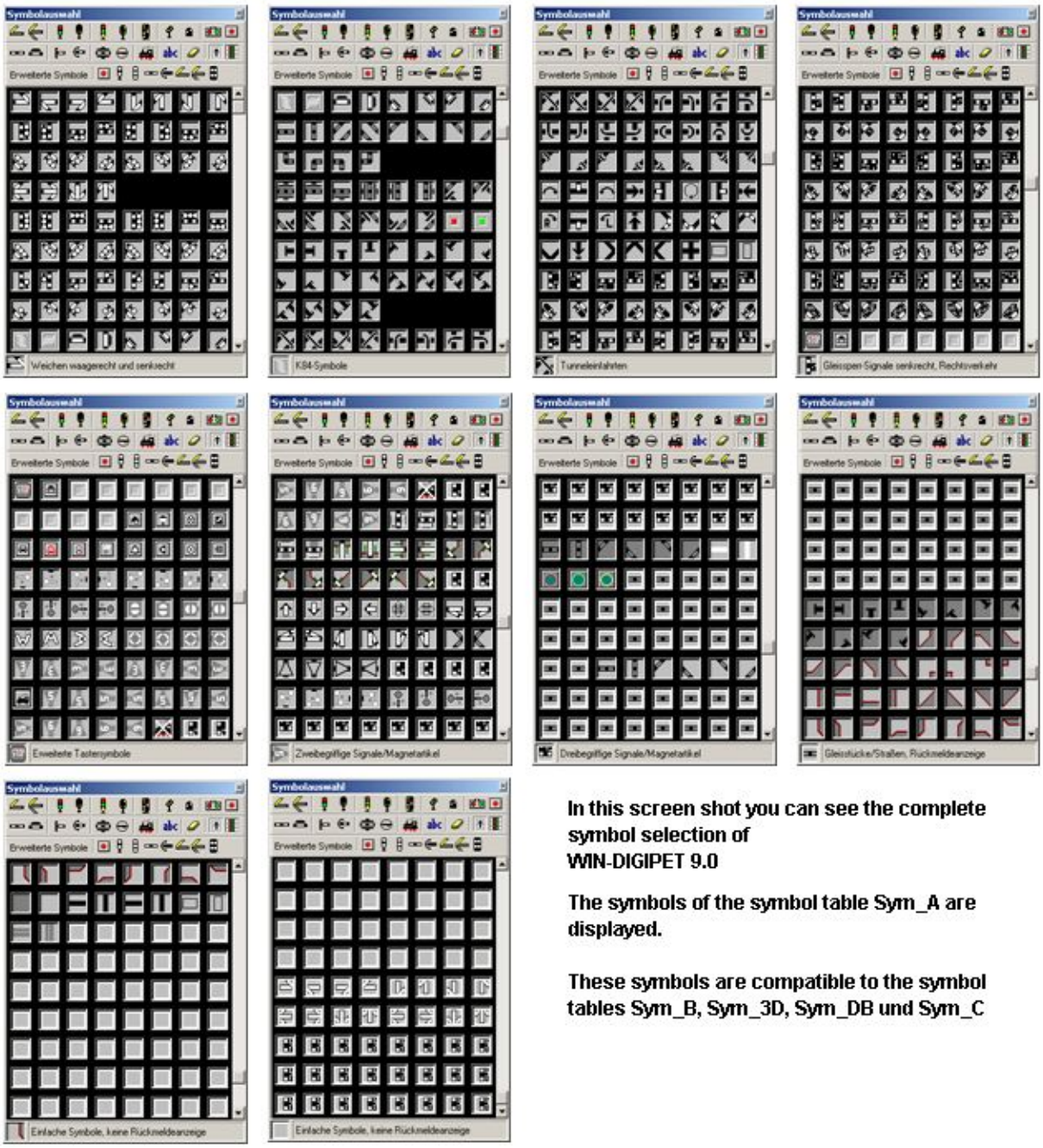
In the icon choice at the left bottom you see the icons for mechanical signals and distant signals and in the third and fourth row from below the icons for drawing of the narrow and wide "X-crossings" in the track diagram.

Also speed indicators, level crossings, direction arrows for the turntable or transfer table, as well as permission arrows are displayed.

A lot of icons are available for the representation of your track diagram and nearly all wishes should be fulfilled.



A short overview of all 628 symbols for **Win-Digipet 9.0:**



In this screen shot you can see the complete symbol selection of WIN-DIGIPET 9.0

The symbols of the symbol table Sym_A are displayed.

These symbols are compatible to the symbol tables Sym_B, Sym_3D, Sym_DB und Sym_C

Use you the remaining symbol tables, you are only a restricted compatibly to the symbol tables above, because the have some different symbols.

These are...

- the signals in the Sym_SBB_A and Sym_SBB_B
- and the additional rail track symbols in Sym_SP.

6.3.1 Description of the new symbols

- **New push-button symbols**

	Solenoid-device-decoder	The new push-buttons have a new design which better fits to the push-buttons symbols. Here you have the choice between a red and green push-button which indicates in each case the other colour when pressed.
	Solenoid-device-decoder	Push-button for emergency stop or other stop commands
	Solenoid-device-decoder	Push-button for controlling the decoupling tracks in the automatic or timetable operations.

- **New switch symbols or K 84 symbols**

	Switching-decoder	The new switches have a new design which better fits to the new switch icons. Here you have the choice between a red and green switch which displays in each case the other colour when turned on.
	Switching-decoder	for house lighting
	Switching-decoder	for road lighting
	Switching-decoder	for fair models (stylized big dipper)
	Switching-decoder	for signal lighting e.g. mechanical signals and also turnout lanterns
	Switching-decoder	for vehicle models with light
	Switching-decoder	for vehicle models with light with emergency lights
	Switching-decoder	for building site lighting
	Switching-decoder	for smoke generators e.g. factory chimneys
	Switching-decoder	for a bell
	Switching-decoder	for a speaker or a sound generator
	Switching-decoder	for lighting
	Switching-decoder	for a motor e.g. a water pump for a mill model

♦ Mechanical signals

WIN-DIGIPET 9.0 offers with the mechanical signals of the German Railways another variant of the signal representation. These symbols are because of the complicated graphic only available as a horizontal or vertical variant.

	Signals with two aspects	Mechanical signal with two aspects Signal aspects Hp0 and Hp2
	Signals with two aspects	Mechanical signal with two aspects Signal aspects Hp0 and Hp2
	Signals with two aspects	Mechanical distant signal with two aspects Signal aspects Vr0 and Vr1
	Signals with two aspects	Mechanical lock signal Signal aspects Sh0 and Sh1
	Signals with two aspects	Mechanical signal with three aspect Signal aspects Hp0, Hp1 and Hp2
	Signals with two aspects	Mechanical distant signal with three aspect Signal aspects Vr0, Vr1 and Vr2

♦ Supplement signals Zs 3 and Zs 3v

These supplement signals are speed displays for the train driver. The allowed speed arises from the displayed figure x 10 (example 6 x 10 = 60 km / h). This applies always to the section behind the signal. These signals are offered by Viessmann.

	Symbols with two aspects	Speed pre-indicator the maximum speed in the next section is 50 km/h.
	Symbols with two aspects	Speed indicator behind this signal the speed is limited to30 km/h. Example: Beginning of a dead-end track.

♦ Waiting signal and starting signal

The waiting signal is mostly used as a shunting signal in parking tracks. The starting signal is used on platforms to allow the conductor to start the train. Both signals are offered by Viessmann.

	Symbols with two aspects	Waiting signal Free drive when lights are illuminated.
	Symbols with two aspects	Starting signal Zp9. When the green circle is illuminated this is the signal from the conductor for the train drive to start the train.

♦ Special symbols for solenoid devices

Now Win-Digipet offers with the version 9.0 many additional rail symbols with which you can decorate the track diagram even more informatively and more interesting. No real addresses are thereby required by the possibility to assign virtual addresses, but they can also be used in add-on switches.

	Symbols with two aspects	Signal track level crossing. Only vertically and horizontally.
	Symbols with two aspects	Double track level crossing. Only vertically and horizontally.
	Symbols with two aspects	Locomotive shed gates in all alignments. With this you can create the locomotive shed of the turntable.
	Symbols with two aspects	Direction arrows vertically and horizontally. You use this to control the direction of the Märklin-transfer table.
	Symbols with two aspects	Start and stop symbols vertically and horizontally. You use this to control the Märklin transfer table.
	Symbols with two aspects	Permission arrows. You use this to for direction-dependent routes.
	Symbols with two aspects	X-Crossings. **The narrow version**. (2 track diagram elements by the height) representation vertically and horizontally.
	Symbols with two aspects	X-Crossings. **The wider version**. (3 track diagram elements by the height) representation vertically and horizontally

♦ Track symbols with feedback contacts

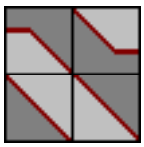
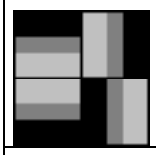
These symbols change their appearance if the electric signal of the assigned feedback contact changes. Thereby you can get additional information (e . g. State of the Märklin turntable decoder 7687) or visualization effects (e . g. Position of the transfer table) in the track diagram.

Besides it is possible by another background colour to create certain layout areas in the track diagram (e . g. locomotive sheds, tunnel distances or hidden stations).

	Track symbols with feedback contacts	With these symbols you can e . g. show the transfer table's position in the track diagram. The Märklin transfer table has to be modified for this.
	Track symbols with feedback contacts	These three lamp symbols serve as state display for the Märklin turntable decoder 7687. In addition three registrations must be connected to a feedback module.
	Track symbols with feedback contacts	Track symbols with other background colour.
	Track symbols with feedback contacts	Track symbols for train number tracking on long block systems in the track diagram. They have, like other track symbols, a feedback contact number and display the train number while occupied.

♦ Simple track symbols

With the help of these symbols you can refine the track diagram optically. **The icons** delivered **by WIN-DIGIPET 9.0** are designed to create locomotive shed or platforms in dark grey.

	Simple track symbols	Track diagram symbols with other background colour and different geometrical figures.
	Simple track symbols	Track diagram symbols for the representation of the turntable or transfer table. You should use this instead of normal track symbols as intersymbols to fill the space between the track connector symbols. Here in the German Railways view.
	Simple track symbols	Track diagram symbol for the representation of the turntable house with other background colour especially in use with the German Railways symbols.
	Simple track symbols	Track diagram's symbols for the completion of level crossings with simple street symbols, in particular with two- or multi-tracked railway lines.

♦ Solenoid devices with feedback contacts

With this type of symbols **WIN-DIGIPET 9.0** offers for the first time the possibility to associate turnouts and turntable connectors with feedback contacts. If you have equipped turnouts or turntable connectors with feedback contacts you can save space in the track diagram thereby. The feedback is meant to be used **for track occupation feedback** and not as switching position feedback!

The colours are the same as for normal track symbols with feedback contacts. The turntable contacts with feedback contacts can be used as **a position feedback** for the turntable. In this case the red illumination of the symbols signifies that the turntable is positioned at this connector.

	Solenoid devices with feedback contacts	Turnouts with feedback contacts. The illumination's colour is the same as for normal track symbols with feedback contacts.
	Solenoid devices with feedback contacts	Three-way Turnouts with feedback contacts. The illumination's colour is the same as for normal track symbols with feedback contacts.
	Solenoid devices with feedback contacts	Turntable connector. Grey and yellow illumination is the same as for turnout.
	Solenoid devices with feedback contacts	Turntable connector with position feedback. Red / yellow = connector selected and position feedback Red / grey = position feedback

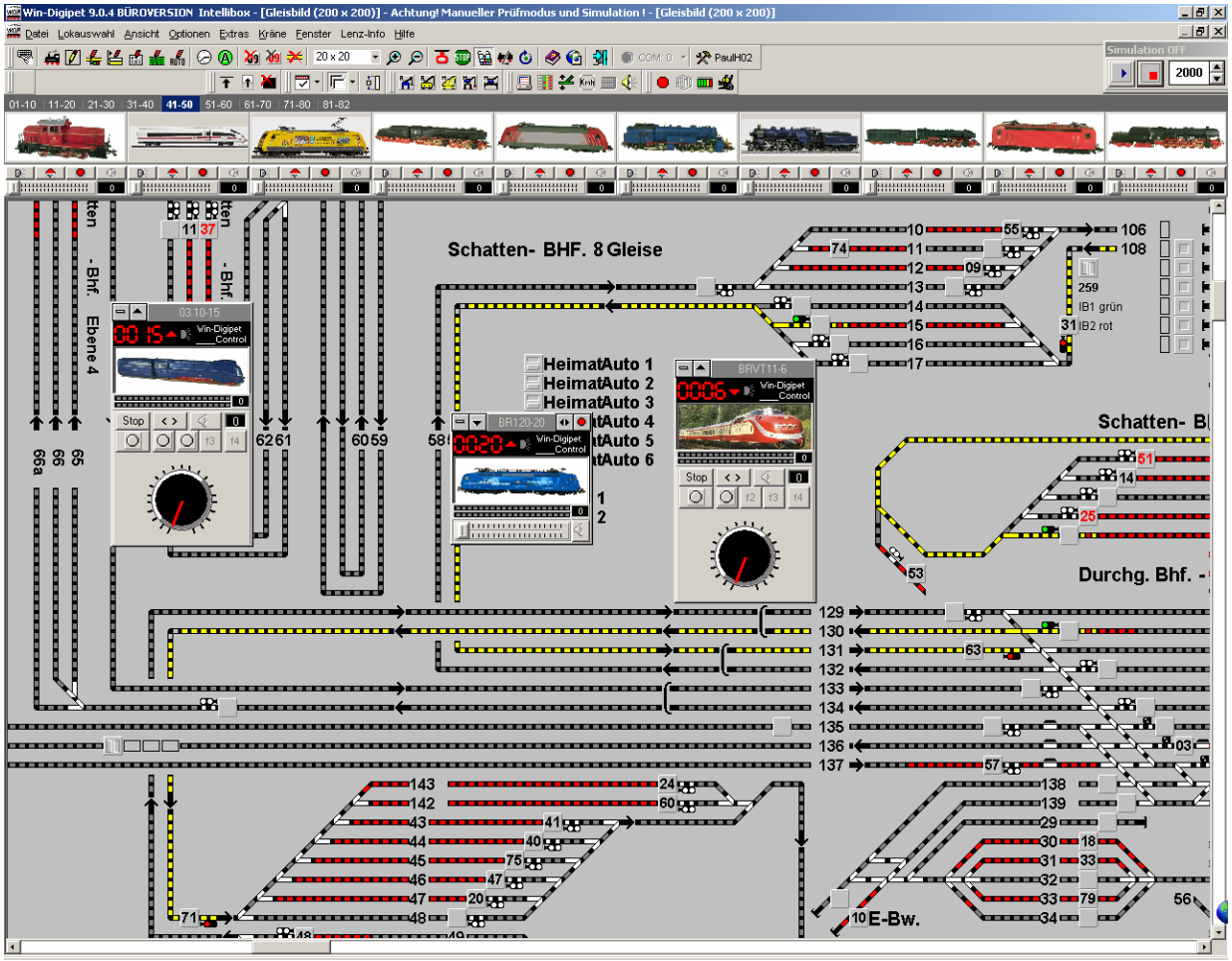
6.3.2 Different track diagrams with the new symbol tables

Here you see seven track diagrams which should show the possibilities of the new icons.

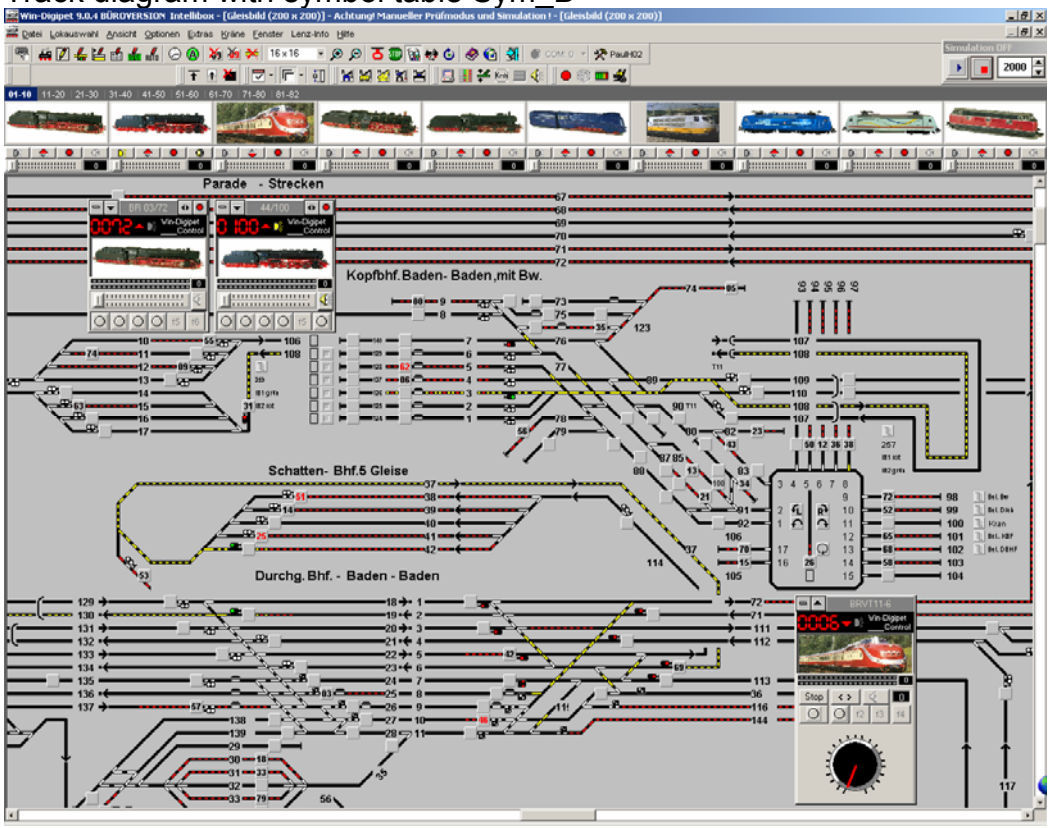
The used symbol tables (see **4.8.5**) are...

- **Sym_A** screened symbols (standard symbol table)
- **Sym_B** solid symbols
- **Sym_3D** 3D symbols
- **Sym_C** symbols with signals in the middle of track
- **Sym_DB** symbols similar to German railway
- **Sym_SBB_A** screened symbols similar to Swiss railway
- **Sym_SP** other symbols with signals in the middle of track

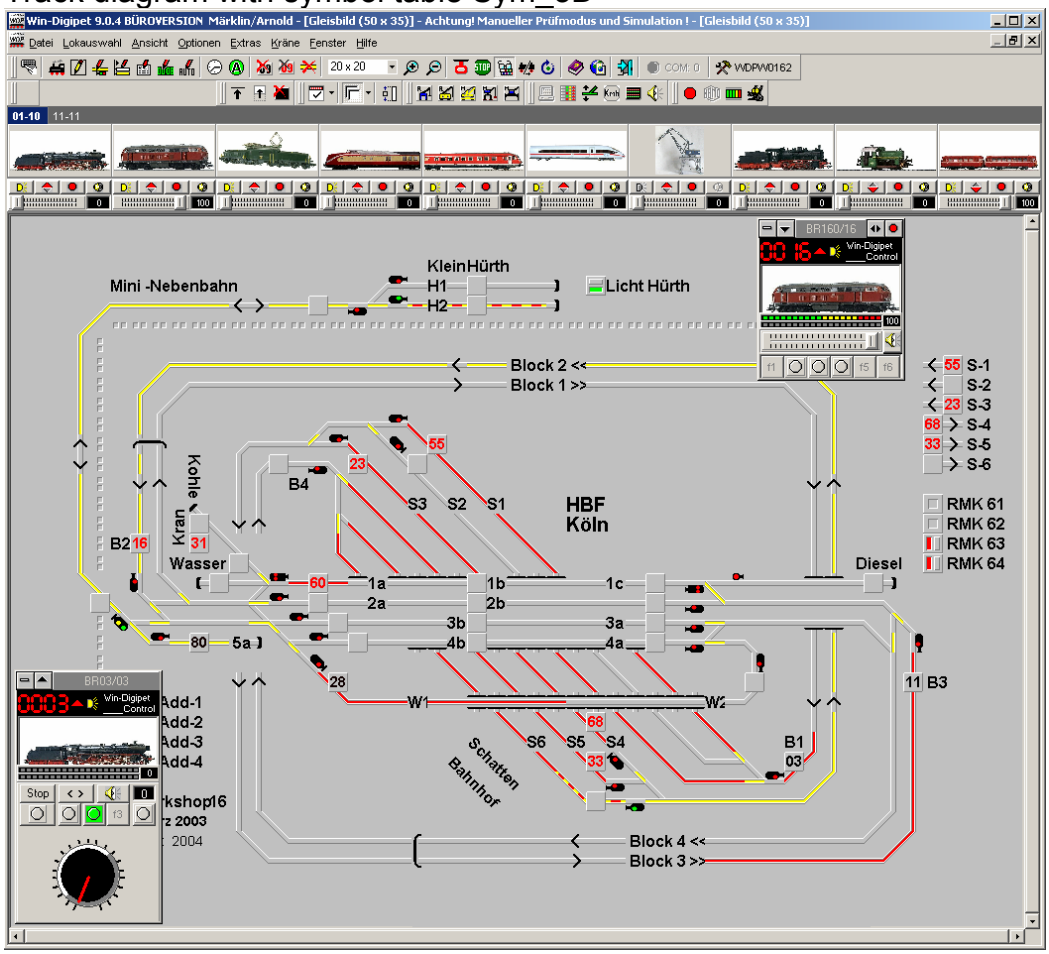
Track diagram with symbol table Sym_A



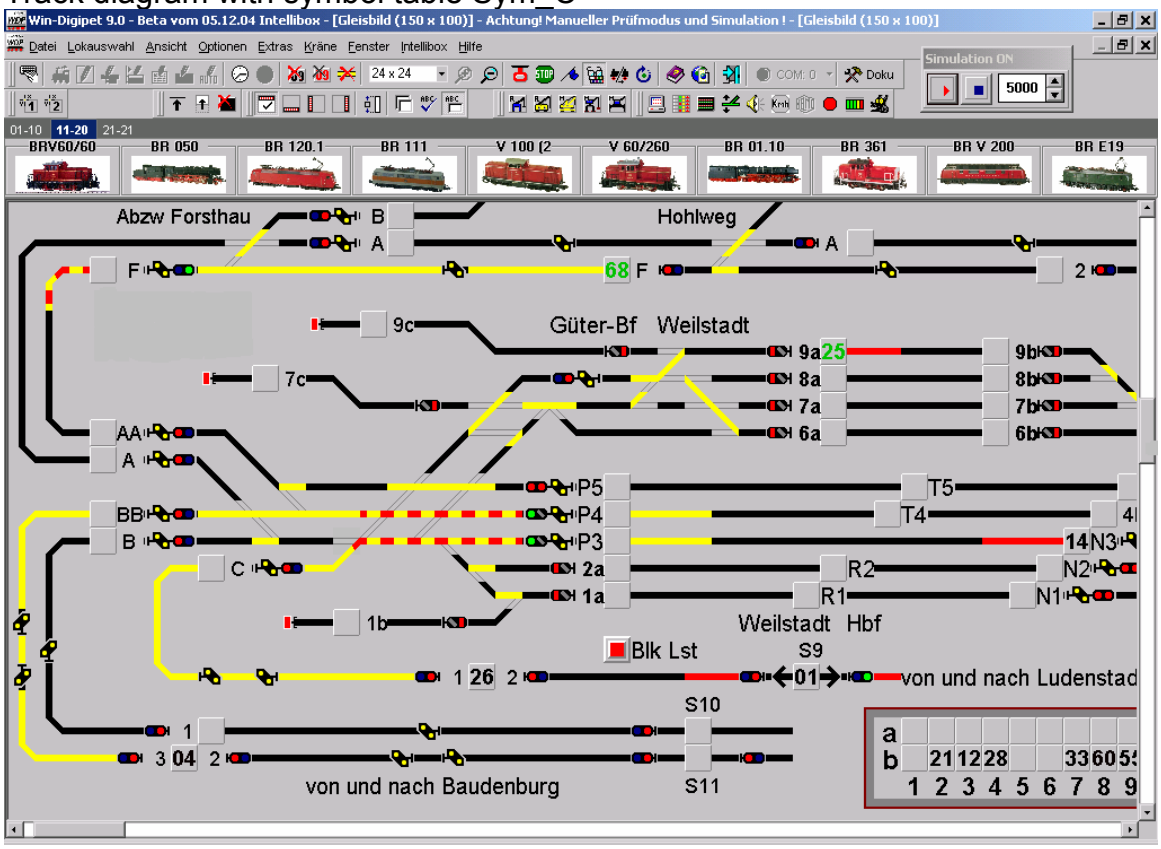
Track diagram with symbol table Sym_B



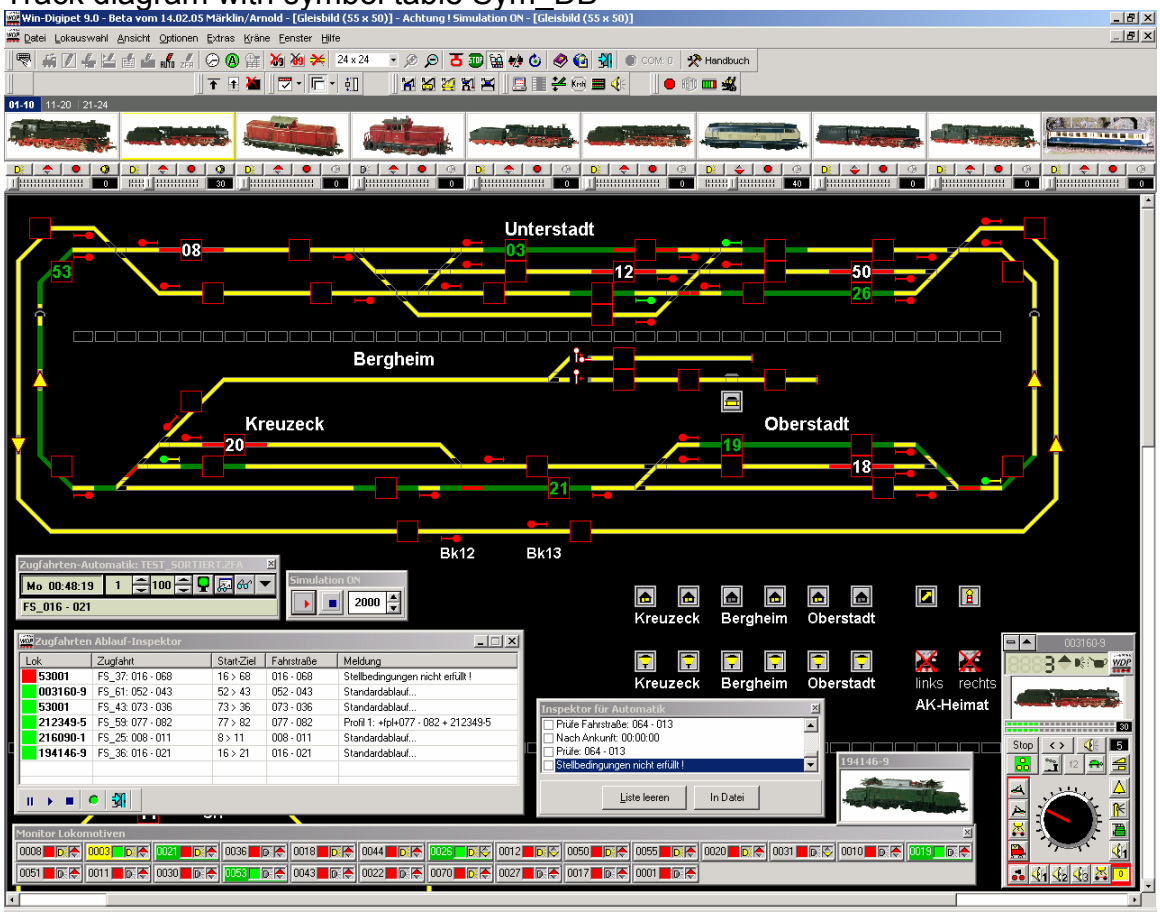
Track diagram with symbol table Sym_3D



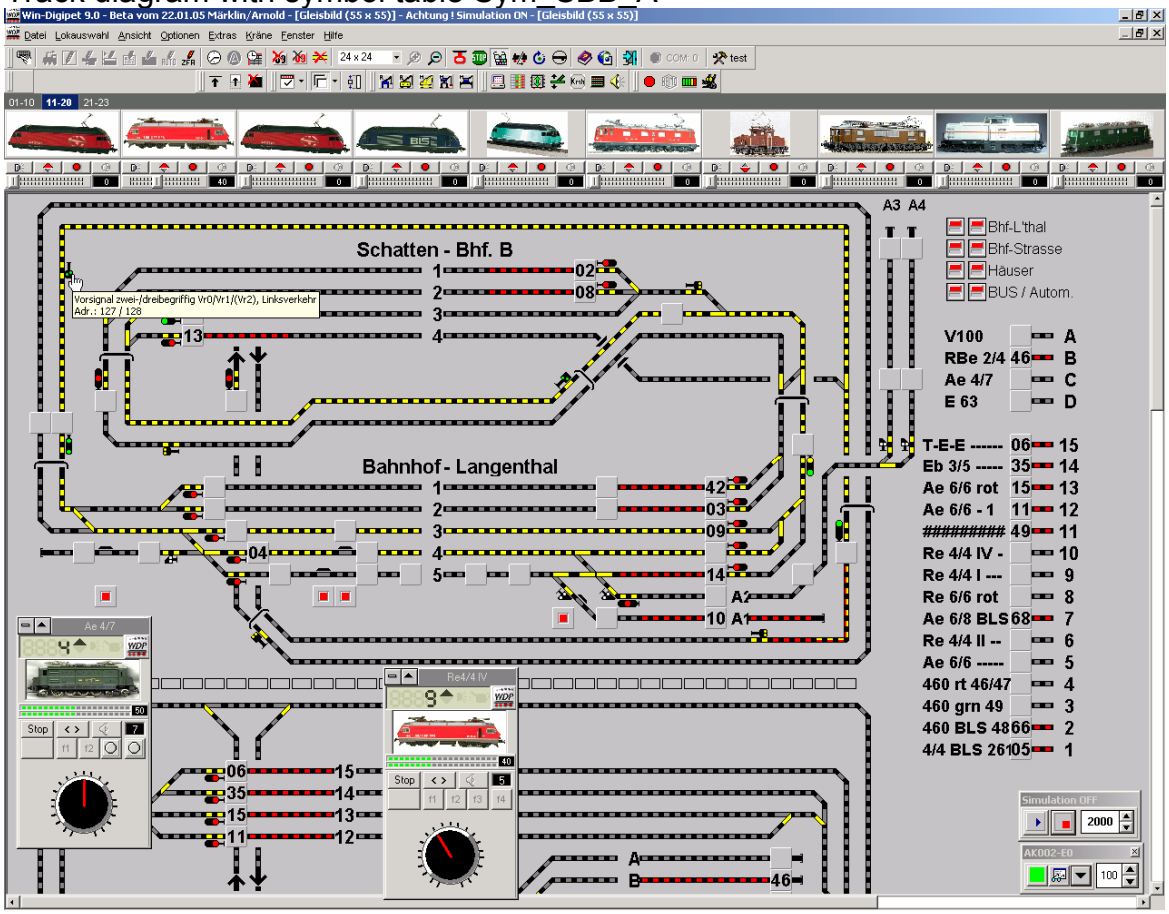
Track diagram with symbol table Sym_C



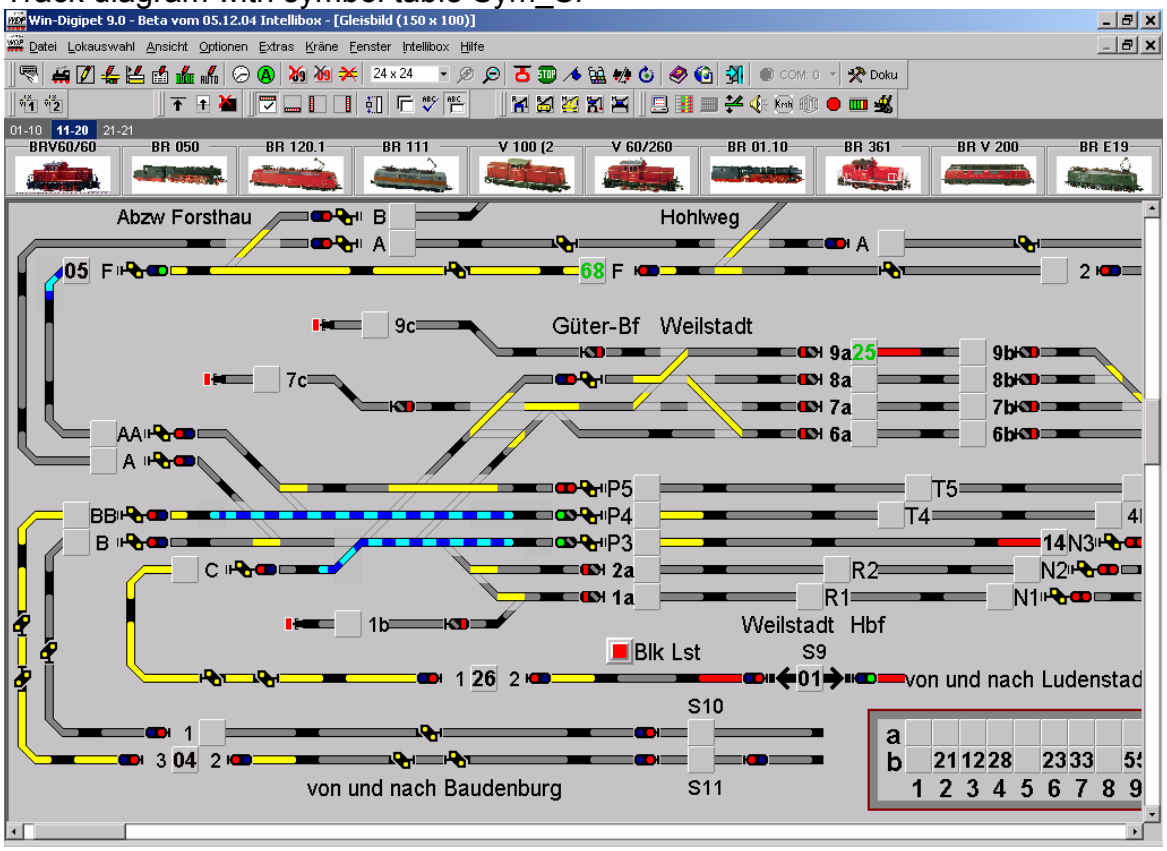
Track diagram with symbol table Sym_DB



Track diagram with symbol table Sym_SBB_A



Track diagram with symbol table Sym_SP



6.3.3 Changing/Creating symbol tables (Sym_U)

In WIN-DIGIPET 9.0 you have the possibility for the first time to create your own symbol tables. With an image program you can change the desired symbols or design also new ones and insert them in the symbol table. Nevertheless you should never change **the predefined symbol tables** for compatibility reasons, you should always use the user's symbols(\Sym_U) for this.

If you want to create „your icons “, you have to take care concerning the following.

- The symbols must be created at first for the symbol table Sym_U20.bmp. This table is loaded always by the track diagram's editor to make the symbols available for selecting purposes.
- The symbols must placed in the suitable category (e. g. K83 / 84, two aspect symbols, three aspect symbols, four aspect signals, track symbols with feedback contacts etc.). This is important because otherwise the symbols don't the correct function **in WIN-DIGIPET 9.0**.
- You should place the symbols, hence, always on the track fields with red background, so that the function of the standard icons is not changed.
- The symbols must fit in the icon fields limited by the black lines.

The symbols must be created also in the zoom steps 12, 16 and 24 after the production of the file Sym_U20.bmp if you want use these zoom steps.

Important!
If you send track diagrams with your symbols to other users, you must send also your file Sym_U20.bmp. Otherwise the other user or beta tester cannot see your track diagram in your version, because quite different symbols could be displayed in the track diagram.

6.3.4 Creating your track diagram

The **WIN-DIGIPET 9.0 Track diagram editor** is particularly easy and comfortable to handle. However, it is recommended that you draw up plan of your track diagram beforehand; a simple sketch will suffice, an engineer-like drawing is never necessary.

In contrast to a scale track diagram your track diagram must not reproduce the exact spatial situation of all rails on your model railroad layout. You should pay attention on a suitable representation of the block systems to be controlled (e .g. Railway station or turntable).

TIP!
Create your track diagram not bigger than necessary; this prevents you from much work.

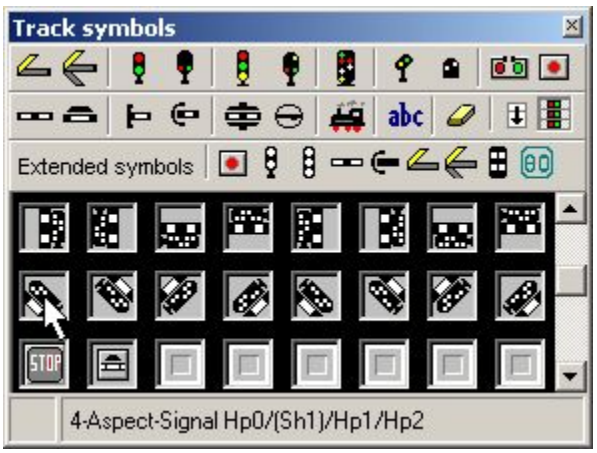
Important hint!
You have to draw your track diagram **two-dimensional**, i.e. multi level areas (shadow railway stations, rail spiral etc.) are displayed in the **WIN-DIGIPET 9.0** track diagram **side by side** (see **19.8**).

Click on the toolbar of the track symbols window at the group to which the individual symbol belongs. Select the symbol, which you want to place into your track diagram. Click on this individual symbol, and the mouse pointer changes to an arrow with the selected symbol.

Example:
You want to select the icon of a horizontal, four aspect light signal for left transport for placing.

Select ***‚Four aspect signals'*** in the toolbar and select afterwards the desired symbol in the selection area.

Now place the symbol by clicking on the desired position in the track diagram.



Tip!
If you **hold the shift key pushed** and click with the mouse repeatedly, you can place the symbols also in different directions.

Nevertheless, the advanced icons cannot be rotated with pushed shift key.

Press the right mouse button: The actual symbol is deactivated, the mouse pointer changes to an arrow, and you can select and place the next symbol. Thus, you proceed quickly through the grid panels gaining experience. You will quickly be able to place a symbol within seconds into the track diagram.

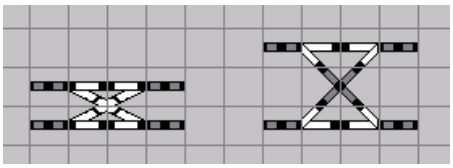
Wherever a symbol is needed several times, e.g. „straight horizontal track“ (six straight track pieces), to represent a long track section, press the left mouse button once in six consecutive grid panels, or drag the mouse pointer with the left mouse button pressed over six grid panels.

If you double click on an already placed symbol, it will immediately be attached at the mouse pointer, and you can place it- without having to return to the track symbols window.

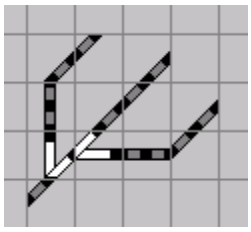
Please observe the following points when drawing your track diagram:

- **Double- slip turnouts and crossings** are composed of two symbols of normal turnouts displayed side by side as pairs in the track symbols window. 

- For the representation of an **"X-crossing"** you have the choice between the narrow one and the normal X-crossing. The narrow variant can be used in order to save space, because here only **4!** different symbols are necessary. For the normal variant at least 6 symbols would be necessary.



- **Three-way turnouts** (slanted) are composed of one vertical and one horizontal normal turnout.



- In the type field "k84 decoders"  you find two single symbols. You should use them if you need so-called virtual switches in your track diagram, e.g. for using as an execution condition for a route or tour in an automatic operation.

  The " **Advanced switches**“ in the advanced symbol choice offer many different switches e.g. switches for house lighting etc. Thus you can switch e.g. the lights very comfortably and you know always which switch in the track diagram is used for this purpose.

  The switch  can be used controlling of a single line rail (see **12.16**).

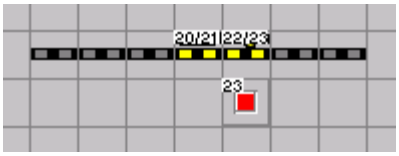
- When selecting the type field "push buttons"  you see two-coloured highlighted single icons. These are **push buttons** which are placed in the track diagram and are treated concerning decoder connection and function in the same way as uncoupling tracks.

  The type field „**Advanced push-buttons**“ gives you access to some additional push-buttons e.g. a button for (emergency) stop.

  You can use the normal and advanced push-buttons also as virtual buttons/switches for the control of operations of every kind ("Home track" search or (de)activation of areas in the automatic operation).

- If you use **the light signal decoders** (e.g. LS-DEC-DB) from LDT, you can also use a pushbutton for the activation of the blanking of the distant signal at the mast of the main signal.

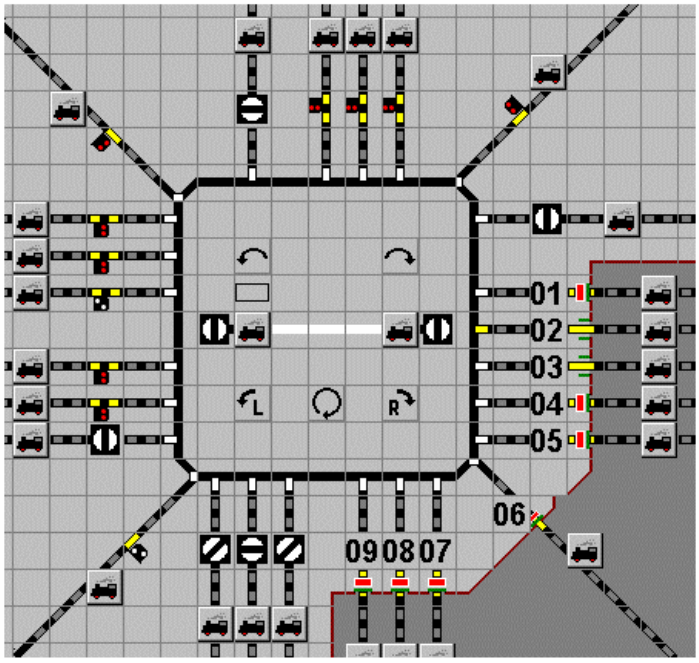
  Moreover an example shows the right picture.

  The addresses 22 (green / red) and 23 (green) are assigned to the distant signal, now the pushbutton is assigned to address 23 (red) for switching of the distant signal's blanking (by clicks on the pushbutton the blanking is (de)activated)

- **Turntable**: Please, read **first chapter 14** - **Digital turntable** - of this manual and follow the instructions of section **14.2 to 14.5**. Make some notes about the addresses **of the turntable connectors.**

  Click then on the type field "Turntable" of the track symbols-window: The symbols for the turntable are now displayed. With these symbols you draw the turntable in your track diagram; a possible example is shown here.



In order to complement the turntable with a locomotive shed you use symbols icons of the left lower picture. The symbols can be found in the row above the red oval. Furthermore you can find turntable rail, disabling signals, buffer stops and shed gates in the symbol tables and decorate with thus your turntable rather attractively. You find the suitable symbols **in the advanced** icon choice (see **6.3.1**).

After you have drawed the turntable in your track diagram, transmit the addresses of all turntable connectors which you had registered **according to section 14.7** into the turntable's track diagram.

You can also have a look at these addresses in the turntables image which you open here in the track diagram's editor (about <Recording) <Turntable>); it is identical with the turntable's image **in section 14.7**.

Details are explained in the section **7.7** of the following **chapter 7**.

Thus you can control in the main program your turntable with a click on a turntable symbol in the track diagram comfortably.

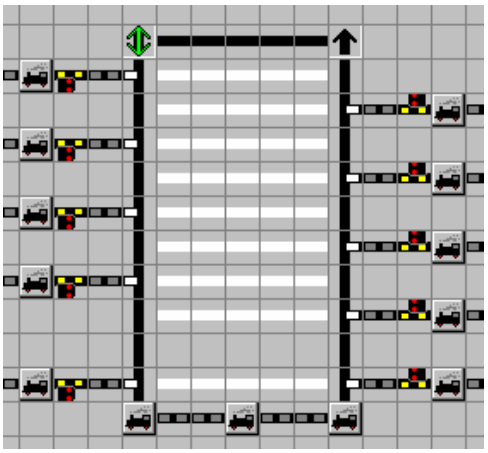
A click on white turntable connectors leads the turntable to this position; then the white illumination changes to yellow.

More details are explained **in section 14.5**.

- You can draw a transfer table with some of the turntable symbols and track diagram symbols from the **advanced** symbol choice (see **6.3.1**).

  The transfer table is controlled with two k84 decoders and a feedback decoder. For the connections with the decoders, please have a look at Workshop #17 on the Win-Digipet homepage where also the rebuilding of the transfer table is described very well.

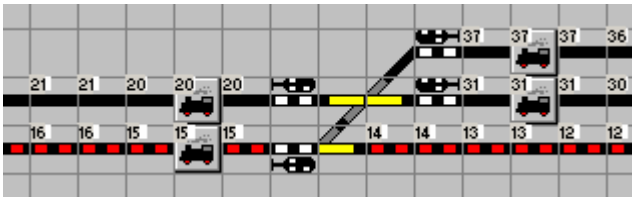
  You find further information in chapter **15.**



- **For the train number display** click on the type field "Train number display"  . Now a little locomotive is attached to the mouse pointer.

  Place this train number display, in each case beside a signal's symbol, at the start and destination of the routes, but leave on normal track symbol between the train number symbol and the signal as shown in the following picture.

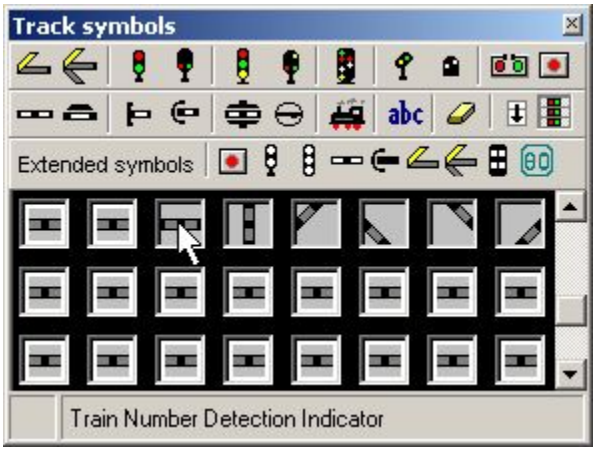
  Thus you can register right and left of the train number symbol the necessary feedback contacts.



You **have to** assign to every train number display a feedback contact number (see **7.4**).

- You can use **train number tracking symbols** on long rail distances of your track diagram. By this you have the possibility to watch the run of the train on the track diagram even better. This is very useful with long distances.

  Select in the symbol's choice the symbols beginning with the number **422**. They look like quite normal rail pieces. After placing them into the track diagram you see, in addition, a small "V". You must assign to this symbol one feedback contact number, so that the train number can be displayed while occupied by the train (see **18.14.4**).



- You **delete icons** from the track diagram with the type field "Rubber" and a cross with a rubber is attached to the mouse pointer.

  Move the cross to the symbols of the track diagram which you want to remove and click on it. By dragging of the cross - with pushed left mouse button - about several track diagram-symbols you can delete a whole track diagram area.

  You can continue your normal drawing after pressing the right mouse button.

Important!
Do never paint over symbols with addresses (feedback contacts, solenoid devises) by other symbols. Please delete the old symbols with the rubber before. In some cases the track diagram must be closed (save first!) after deleting of symbols once and be opened again, before the new symbols can be drawn.

TIP!
If you click on a symbol in the symbol's choice and hold the mouse pushed, the symbol is displayed at the left bottom and on the right the current number of the symbol is displayed. After releasing the mouse button the symbol's description is displayed instead of the symbol's number.

before and after


6.3.5 Insert text in the track diagram

Use the group panel 'abc' in the symbols bar of the track symbols window for this option. Click on it and drag the mouse pointer away from the track symbols window: A cross with „abc" is attached to the mouse pointer.

Move the cross to the grid panel where you want the text to begin: it will be framed by a rectangle, and the window „Text input" appears.

Enter your text in the upper panel, e.g. track numbers, station names etc., up to 12 characters max. With longer text, attach the subsequent text parts in groups of not more than 12 characters each.

Four font sizes are available-following the zoom steps of the track diagram.

You can have the text positioned horizontally („0 degree."), vertically („90 degree."), diagonally slanting upwards („+45 degree.") or diagonally right slanting downwards („-45 degree."), standard or bold text.
standard or bold text.

If you want to pre-check your text input, click on **'Preview'**. Your text will be placed into your track diagram. Should you be satisfied, click **'OK'**, otherwise **'Cancel'**.

You can now enter more text or deactivate „Text input" through the right mouse button.

Text can be modified overwriting it in the window „Text input", and deleted in that window with „eraser".

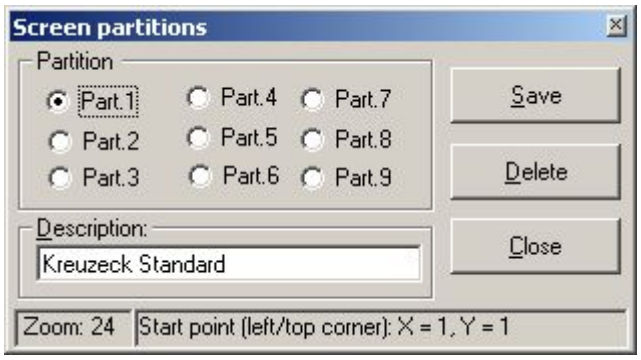
The beginning of the text has to be found in both cases.

Tip!
A text may never begin with a blank character, otherwise the text is not saved.

6.3.6 Track diagram sections

WIN-DIGIPET 9.0 makes it possible to define up to nine sections of the track diagram, in various zoom sizes. The sections can also be called from the main program. Sections can be loaded to the screen through a mouse click, e.g. central station, branch line, main line, hidden yard1, hidden yard2, etc.

Such sections of the track diagram have to be determined beforehand.



Click on the menu bar <Screen partitions>, then on <Determine> or on <Screen partitions> in the symbols bar on the switch .

A new window „Screen partitions“ appears.

Set the zoom factor first (see above **6.2.4**).

Select the first partition „picture1“.

In the „Description“ panel you name the section e.g. central station (up to 20 chars.).

Next define the track diagram section: This is the part of the track diagram section that you see on the screen. Browse through the whole track diagram, using the scroll bars on the right and bottom until the part you see on the screen corresponds to your idea. As a reference point, the upper left-hand corner of the section is marked with the co-ordinates „X“ and „Y“.

When you are satisfied with your selection, click on **'*Save*'**.

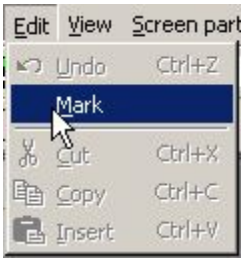
In the symbols bar you see the first of nine section symbols marked in black and its name on a yellow bar next to it.

In the same manner you can define further track diagram sections. Through a click on the relevant symbol in the toolbar you load a section to the screen.

To delete a track diagram section click on <Screen partitions> <Determine>, select the section concerned in the window „Screen partitions” window and click on **'Cancel'**.

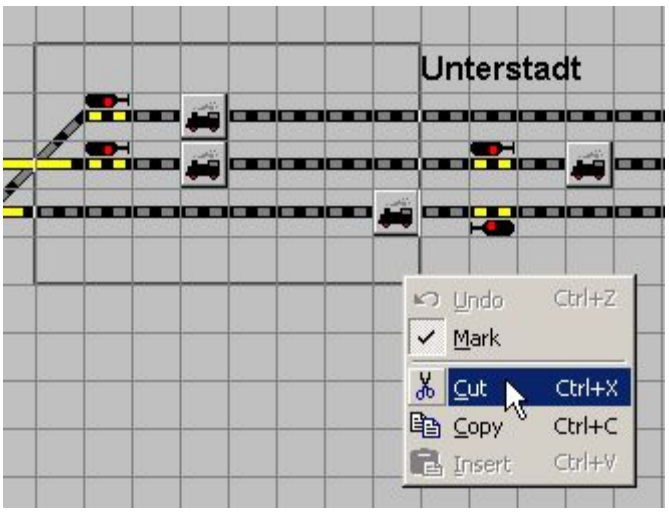
6.3.7 Cut, copy, paste track diagram

Click on <Process> in the menu bar and then on <Mark>. The mouse pointer changes to a cross. Keep the left mouse button pressed and move the cross along the edges of the track diagram part you want to work on: It will be enclosed by a frame.



Press the right mouse button and select in the short menu <Cut> or <Copy>.

<Cut> removes the marked track diagram part.



Press again the right mouse button and select **<Insert>**; the mouse pointer changes to an arrow with a rectangle.

Use it to fix the position where you want to insert the cut part and press the left mouse button there: The cut part will be inserted at this position. You can undo the insertion only once

When you are satisfied with the inserting, perform an **intermediate saving**.

You can also delete the cut out part by returning to the menu after <Cut> instead of pressing the right mouse button.

Copy: Press the right mouse button and select <Insert>; the mouse pointer changes to an arrow with a rectangle. Determine the area into which you want to copy the marked area and press the left mouse button for copying.

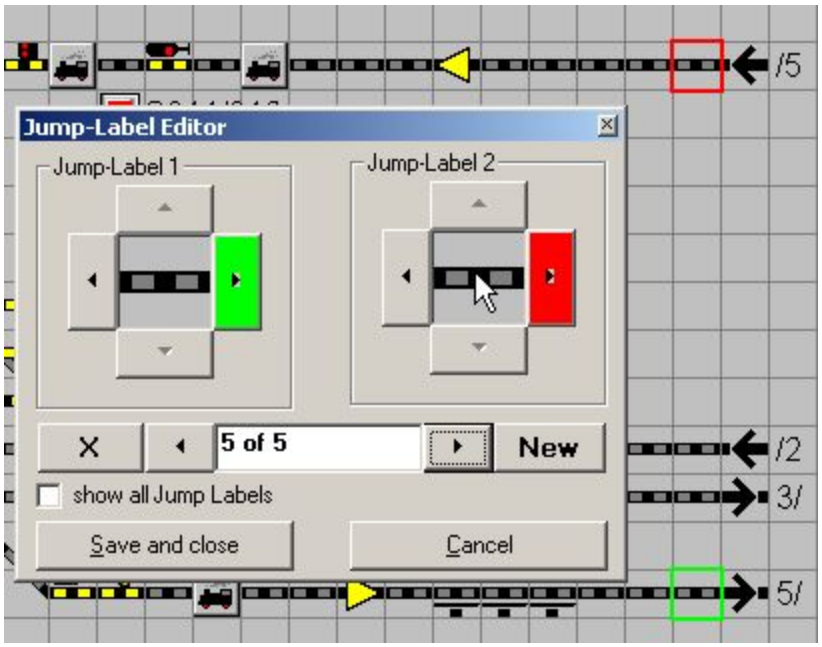
Hint!
Already registered routes have to be rerecorded or corrected after this. Further information about correcting routes can be found under **8.14**.

To leave the 'Process' mode, uncheck the ticks in the sub menus mentioned above .

6.3.8 Jump-label editor

In **WIN-DIGIPET 9.0** for the first time routes can be recorded also automatically according to **8.5**. As additional help for this function a jump-label editor was created in the track diagram's editor. This is necessary if you have a track diagram in which the rail distances are interrupted by texts or similar things.

You open the jump-label editor with the menu command <Options> <Set jump label> or with a click on the symbol in the toolbar of the track diagram's editor. The window "jump-label editor" opens. In order to register a new jump-label in your track diagram click on the button ***'New'***.

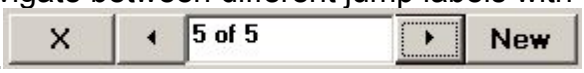


Now you drag with pushed left mouse button the last track symbol before the jump place (here framed in green) in the box "Jump label 1" and select with a click on an activated direction arrow the direction to the jump. After the click the button gets green.

You have to add the second jump label in the same manner.

It is important to select always the arrow in direction of the jump (death end). The jump label have a bidirectional function: a jump can be performed from label 1 to 2 or from label 2 to 1.

After the registering of all desired jump labels, press ***'Save and Close'***. The jump labels are saved in the file **JUMP.DAT**.

You can navigate between different jump labels with the two arrows in the lower part of the window. 

When moving the mouse of the pictures of the jump labels in the editor, the according symbols in the track diagram are framed in green and red (see picture above). By checking „*Show all jump labels*“ all jump labels are displayed immediately in the track diagram.

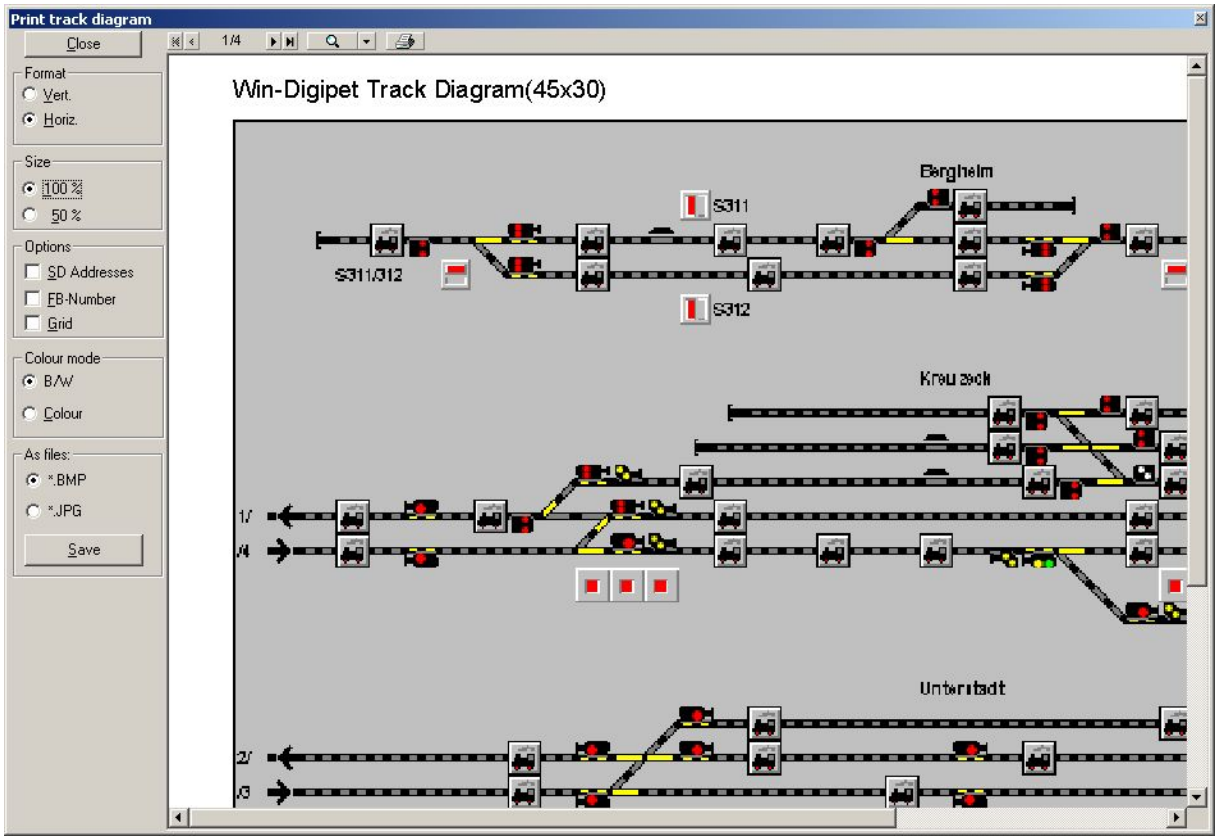
With the button 

you can the delete the current jump label.

Important!
Nearly all track symbols can be used as jump labels, excepted are buffer stops, turntable and moving table symbols, push-buttons, switches and locomotive shed symbols. These symbols can't be registered as a jump label.

6.4 Print track diagram

Select this function via <File> <Print> or the switch in the toolbar in the window „Print Track Diagram“. The window has the same structure as „Print locomotive data base“ (see **5.16**); the possible functions are self-explanatory.



Print size: usually 50% is sufficient.

The „Options“ ‚Solenoid device address’ and ‘Feedback contact number’ will be checked by you as soon as you read chapter **7**.

You have the choice to save the track diagram on the Hard Disk **as files**, using the space saving JPG format or the non-space saving BMP format.

Click on ‘In files’ on a format (*.BMP or *.JPG) followed by **‘Save’**.

Up to 4 files are saved in your Win Digipet directory, called track1.bmp **(. jpg)** to **track4.bmp (. jpg)**. You can use any graphics program to make changes to scale the track diagram to the required size before printing it.

6.5 Save Track Diagram

Click on <File> in the menu bar, followed by <Save> or on the switch in the toolbar. It is recommended to perform this function several times during the generation/ modification of a track diagram. This prevents that changes are lost.

6.6 Edit and Delete Track Diagram

To alter anything on your completed track diagram, select <Record> <Edit Track Diagram> or click on the symbol in the toolbar.

If you want to change track symbols (signals, turnouts, train number symbols etc.) with already assigned solenoid-device- and feedback-addresses, you should proceed as follows...

- delete symbols with the eraser
- then add the new symbols
- don't forget to save the track diagram.

Hint!
When making many changes at your track layout at the same time it could be sometimes necessary to delete the symbols, save the track diagram, close the editor and reopen the editor. Only after this the new symbols shouldn't be added.

The complete track diagram will be deleted if you click on <File> and <Delete> or on the switch in the toolbar. A warning is issued before the delete process.

After the delete, an empty track diagram will be found.

The old track diagram is saved as **GBILD.BAK** and could be re-activated by re-naming it **GBILD.DAT**.

6.7 Display and print the system settings

Via <Help> at the menu bar of the track layout editor or by a click at the symbol e.g. Anlage with your project name, you will get to <Print project status>: You will see the system settings of your actual project in a clearly arranged list. You can print this list – or you can convert this list via two buttons (upper left side of the window) into a RTF or HTM file. Therefore you can easily forward your actual system settings as part of an email for further problem discussions.

6.8 Exit Track Diagram Editor

Click on <File> in the menu bar and <Close> or on the switch in the toolbar: You are returned to the main program **WIN-DIGIPET 9.0** after a security question if you haven't saved yet.

7 – SOLENOID DEVICE DATA AND FEEDBACK CONTACTS

7.1 General

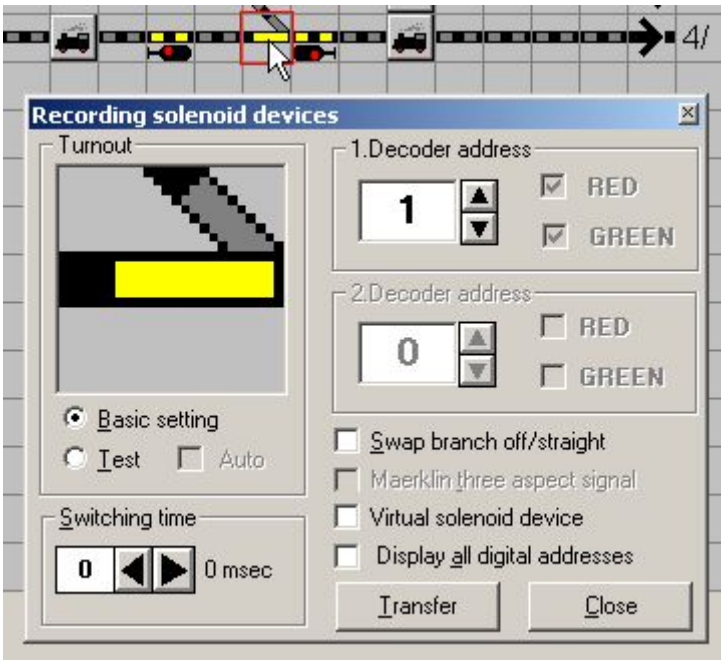
Recording, maintenance and testing of the data is done in the track diagram, thus, you have comprehensive control.

It is advisable that you have an exact list of the solenoid devices on your layout with relevant decoder addresses prepared before you start entering data.

A list of the feedback contacts is also helpful for quick, correct data recording.

7.2 Recording solenoid device data and test, address display

Click on the menu 'Record' and 'Solenoid device address' or on the switch in the toolbar. The track symbol window disappears and the mouse pointer changes to an arrow with micro switches.



Point to the solenoid device you want to record: It will be framed by a red triangle. Click on it: A window „Recording solenoid devices" is opened.

At the upper left the solenoid device is displayed as a large symbol, and its type is indicated, e.g. „Turnout…". Enter the address or both addresses of the solenoid device.

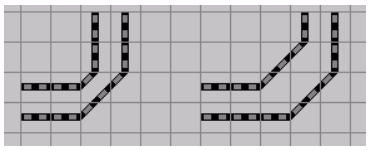
The program has already checked/ unchecked the connections „RED" and „GREEN" for most of the solenoid devices.

Note only the following exceptions:

- Enter the connection for a three-aspect signal i.e. RED or GREEN as well as the second decoder address.
  If it is a Märklin signal, check 'Märklin three aspect signal'. If it is a non-Märklin signal, uncheck the switch.
  Normal double slip turnouts with one solenoid: Enter first decoder address, followed by second decoder address, value = **0**.
  Address **0** deactivates the symbol, basic setting and testing of the solenoid device.
- Double slip turnouts with 2 solenoids:
  First and second decoder address have to be entered.

- You can share addresses for signals or turnouts , e.g. if you have assign the main signal's address also to the distant signal. When switching one of these solenoid devices in the track diagram also solenoid devices with the same address are synchronized **automatically**. Crossings and three way turnouts are not synchronized.

- You should draw **diagonal** rails as far as possible always in the second variant, because this will same you a lot of time when recording routes etc.. Using the double diagonal rails from the first variant requires every time the choice whether the upper or the lower part of the symbol is to be recorded when registering a route.

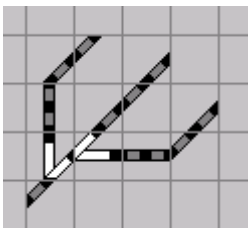


- To register a turntable including addresses see chapter **7.7**.
- To register a moving table including addresses see chapter **7.8**.

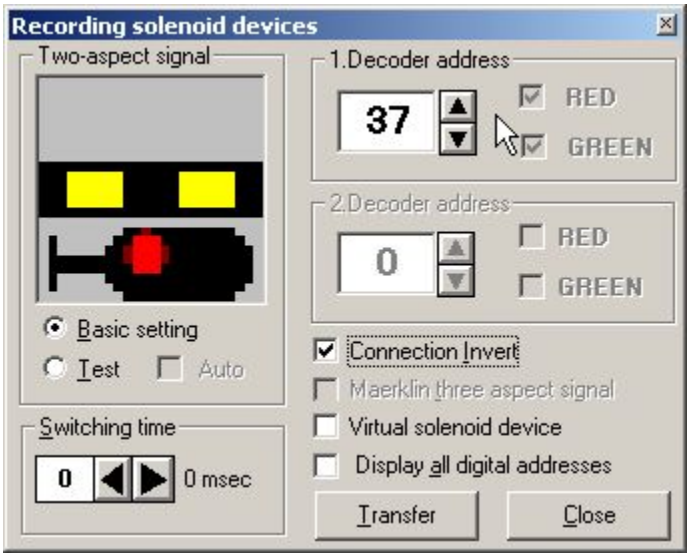
- You can determine the **„Switching time**" (0 to 3000 msec) individually for each solenoid device. This may be an advantage with uncoupler tracks and older model turnouts.

- With **normal turnouts in slanted position**, activate 'Swap branch off/straight'. This produces the correct symbol display in the program.

- Ensure that both turnouts are switched to "straight" prior to any "branch" switching if you have represented three **way turnout in slanted position** in the track diagram by a vertical and horizontal normal turnout (see **6.3.4**). Each must have its own address.

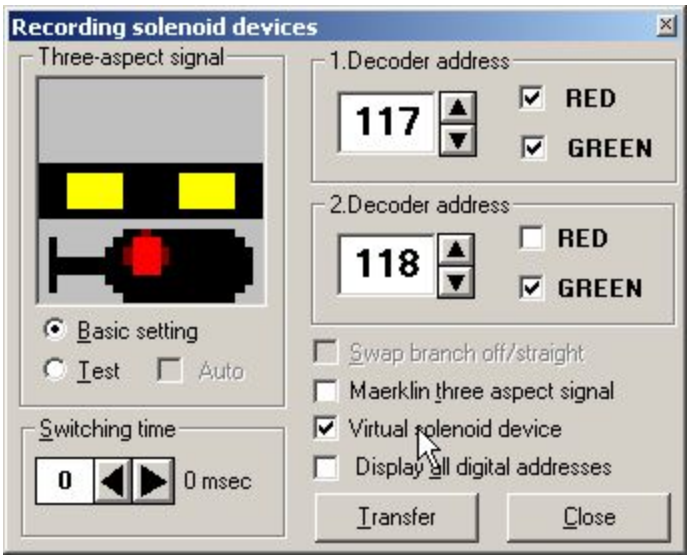


- All solenoid devices with two aspects offer the possibility **to exchange the connectors**. This function is very useful because you exchange the two decoder connectors without the need to exchange a cable e.g. your signal is in red state in the track diagram, but on your model railroad it is green at the same time. This new function saves you a lot of work.



- Solenoid devices, that are not present on your model railroad, but in your track diagram can receive **a virtual address**. Just check "Virtual solenoid device".

  For this solenoid device no data is sent **from WIN-DIGIPET 9.0** any longer and the data stream is very much reduced. The virtual address may also be **above** of the normal address range of the digital system.



Clicking on the large symbol you determine the basic setting of the solenoid device.

Finally you transfer this recorded solenoid device by ***'Transfer'*** to the track diagram; you will see the basic setting there.

To check your entries, test this solenoid device: select 'Test' and click repeatedly on the large symbol.

The solenoid device is tested continually – in 1 sec. intervals- if 'Test' and the switch 'Auto' is activated.

This function enables you to check the function of the solenoid devices – away from the computer- for their correct operation on the layout.

You should be especially careful with the turnouts with 2 drives (crossings and three-way turnouts). Here it is advisable to test one turnout drive always first and only when it functions properly to test the second one. For these solenoid devices you can only exchange the connections at the decoder and **not** with the program.

All solenoid devices are highlighted in red in the track diagram, if you have checked 'Display all addresses'. It can be reversed by unchecking 'Display all addresses'.

TIP!
If you have a big model railroad layout with a lot of signals, turnouts, uncoupling tracks, solenoid device decoders and switch decoders, you reach rather fast the limits (for Märklin e.g. 256) of the available digital addresses.

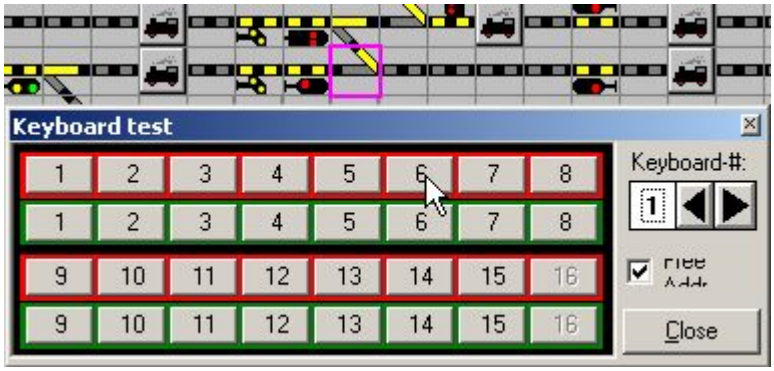
In this case you assign only to the solenoid devices really available on the layout a digital address. You assign to the not really(actually) available magnet articles no address if you must not control the solenoid device with the mouse, e.g. to switch the signal von Stop or Go in order to fulfil a switching condition.

If you need two switch such virtual signals, switches and push-buttons with the mouse, you should assign **a virtual addresses** which can also be above the limits (for Märklin e.g. 256) of the available digital addresses. Nevertheless, in this case you check " *Virtual solenoid device*".

All commands to virtual magnet articles are not sent to the digital system **by WIN-DIGIPET 9.0**. You can save transmitting time by this function.

7.3 Virtual Keyboard to test all Solenoid Devices

The Märklin keyboard can be emulated via <Options> - <Keyboard Solenoid Device Test> or using switch in the toolbar. The following window opens:



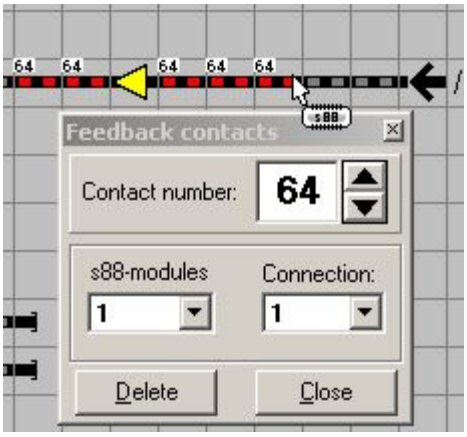
Forward and backward pointing arrows allow you to jump from one keyboard number to the next.

This window offers two functions:

- All inactive solenoid devices are not shown in the track diagram, if you checked the switch next to 'Free Addresses'. This shows you the non- allocated addresses (or which solenoid device is not working because of an electrical or mechanical malfunction).
- Also, with a click on the address of the solenoid device, you can check the correct functioning: top key „Red", bottom key „Green". The solenoid device is displayed on the screen, framed in red, and its actual position is indicated.

7.4 Recording feedback contacts, display numbers

Click on the menu <Record> and then on <Feedback contacts> or on the switch in the toolbar. The window „Feedback contacts" appears, and all feedback contacts recorded so far are displayed.



In the *„Contact number"* panel enter the item number of the contact, either through mouse clicks on the arrows or via the keyboard. Instead of this you can enter in the „feedback module" panel the number of the relevant feedback module and in the „Connection" panel the number of the contact (1 to 16) on this feedback module. The correct item number of that contact appears in the „Contact number" panel.

Move the mouse pointer to the track symbol to which you want to assign the item number of this contact and press the left mouse button. The contact number you entered appears immediately. You can place it in the track diagram as often as you wish by pressing the left mouse button repeatedly or by dragging the mouse pointer with the left mouse button depressed.

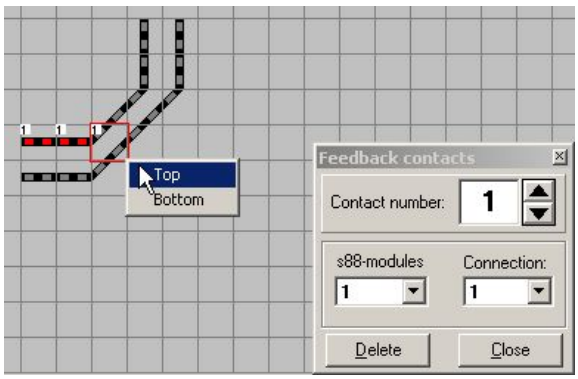
If you want to delete a contact number click on ***'Delete'*** and proceed as described above.

Tip for the Lenz-System!
For the Lenz System the contact number is selected indirectly by the combination of *"FB address"* and *"connector"* of the FB module. Nevertheless, you assign these contact numbers to track symbols the same way as described above.

If you click ***on 'Erase***, the contact number is set to "0", however, the entries for *"FB address"* and with *"connector"* stay the same.

There are two track symbol panels with two itineraries each: Two diagonal track sections in one symbol panel. If you want to insert a feedback contact into each panel, a short menu <Top> - <Bottom> is opened.

Determine by clicking on <Top> or <Bottom> to which track section you want to assign the contact number (see also **7.2**).



7.4.1 Turnouts with feedback contacts

With this type of symbols **WIN-DIGIPET 9.0** offers for the first time the possibility to associate turnouts and turntable connectors with feedback contacts.

If you have equipped turnouts or turntable connectors with feedback contacts you can save space in the track diagram thereby.

For crossings you can assign up to 2 feedback contact numbers per turnout as shown in the picture if this is supported by your crossings. For all other turnouts only one contact number is possible. In general you will also use only one feedback contact for crossings which indicates **the occupation of the crossing**. In this case you register the same contact number to both parts of the crossing.

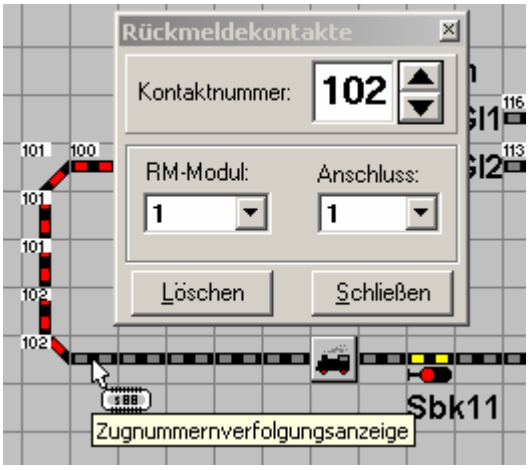
Attention!
The feedback is meant to be used **for track occupation feedback** and not as switching position feedback. If you have changed the track diagram after the recording of routes, you must record the routes once again or correct them.

7.4.2 Train number tracking

If you have used train number tracking symbols in your track diagram according to section **6.3.4**, you must assign to this symbols marked a small "V" a feedback contact number.

After a click on the symbol in the toolbar of the track diagram's editor the small "V" disappears in the track diagram, the symbol now looks the same way as a normal piece of rail. Only when moving the mouse over the symbol, a tool tip appears telling you, that this symbol is a train number tracking symbol.

Assign a feedback contact number to the train number tracking symbol with a mouse click on it.



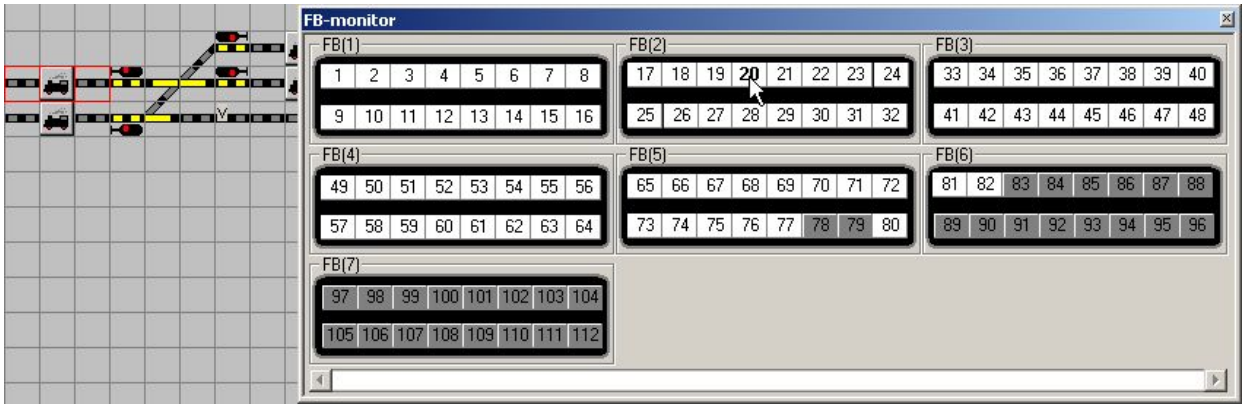
7.5 Feedback monitors

This display allows you to check the correct functioning of the feedback contacts from within the track diagram editor and which contacts are unused until now.

If you use the Lenz system the windows differ a little, because of this they are shown in **7.5.2** and **7.5.4**.

7.5.1 FB-Monitor with already recorded contacts

Click on <Options> and then on <s88 Monitor> or on the switch in the toolbar.



Displayed are the in the system settings recorded feedback modules and the feedback contact numbers. A maximum of 9 feedback modules are displayed; if there are more than 9, the lower horizontal scroll bar lets you scroll to further feedback modules.

The advantage of this monitor is, all available feedback contacts, which are not registered, respectively not used in the track layout diagram, will be blanked out in **grey**. This will help you to identify which contacts regarding which feedback modules are still available for further expansion.

If you click on a number of an already registered FB-contact, its position will be indicated in the track layout diagram. All symbols which belong to this FB-contact will be framed in **RED**.

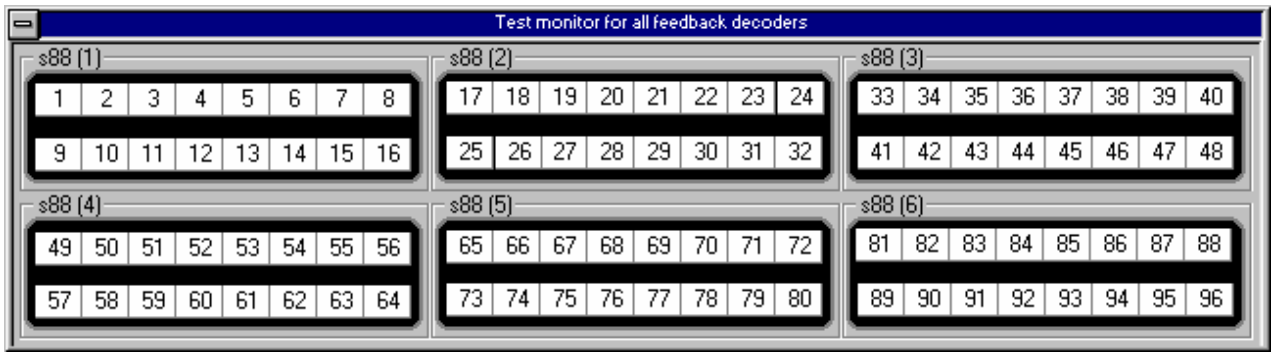
7.5.2 The FB-Monitor with already recorded contacts (Lenz-System)

Click on <Options> and then on <s88 Monitor> or on the switch in the toolbar.

Displayed are 124 feedback modules available in the **Lenz-System** and the feedback contact numbers. A maximum of 9 feedback modules are displayed; if there are more than 9, the lower horizontal scroll bar lets you scroll to further feedback modules.

7.5.3 Test Monitor of all feedback decoders

Click on <Options> <Test Monitor for all feedback decoders> or on the button at the toolbar.



During building a track layout, this monitor has the advantage to show all FB-modules directly, not only the already recorded ones.

Quite often you don't remember - due to missing documentation - , where particular FB-contacts are situated, to record these into the track layout diagram.

If you now move a wagon or a train along a contact, the rectangular symbol of the corresponding contact will change from white (not occupied) to red (occupied) and you will notice, where the train will be on your model railroad.

7.5.4 Test Monitor of all feedback decoders (Lenz-System)

Click on <Options> <Test Monitor for all feedback decoders> or on the button at the toolbar.

Displayed are 124 feedback modules available in the **Lenz-System** and the feedback contact numbers. A maximum of 9 feedback modules are displayed; if there are more than 9, the lower horizontal scroll bar lets you scroll to further feedback modules.

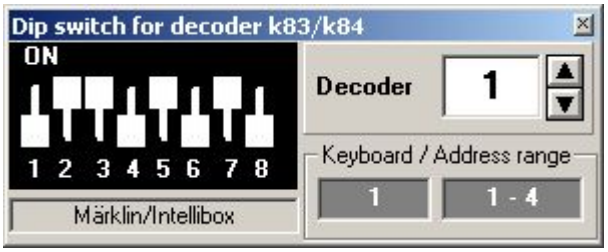
During building a track layout, this monitor has the advantage to show all FB-modules directly, not only the already recorded ones.

If you now move a wagon or a train along a contact, the rectangular symbol of the corresponding contact will change from white (not occupied) to red (occupied) and you will notice, where the train will be on your model railroad.

7.6 Dip switch settings of Decoder k83/84

This section is just valid for Märklin decoders k83/k84.

Via <Options> you get to <Dip-Jumper for decoder k83/k84> or via the symbol in the toolbar.



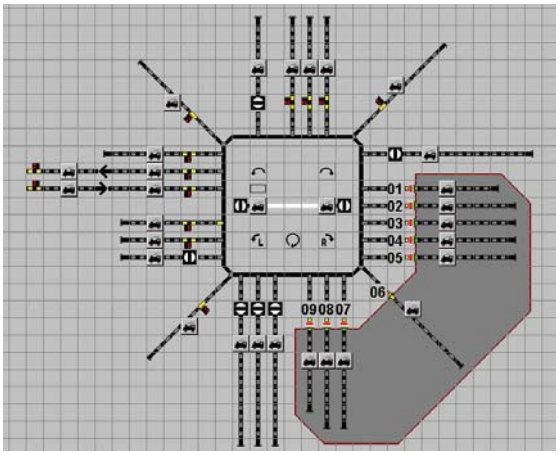
Therefore this information is for your disposal in the track layout editor.

You need not search in any other documentation or manuals of other products.

This dip setting can only be used for normal k83/k84 decoders and not for C-track-turnout decoders of Märklin's, because these have 10 dip switches.

7.7 Recording a turntable including addresses in the track layout diagram

Like already explained in **6.3.4** you should have drawn the turntable into your track layout diagram.

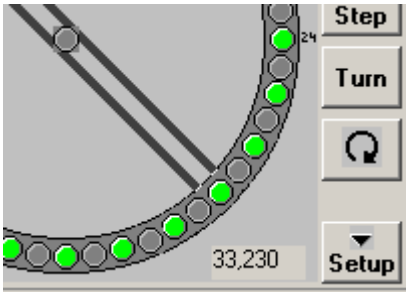


In a possible track diagram is shown at the right.

With the extended symbols also a rail engine shed can be drawn easily.

To record please pay attention to the following notes!

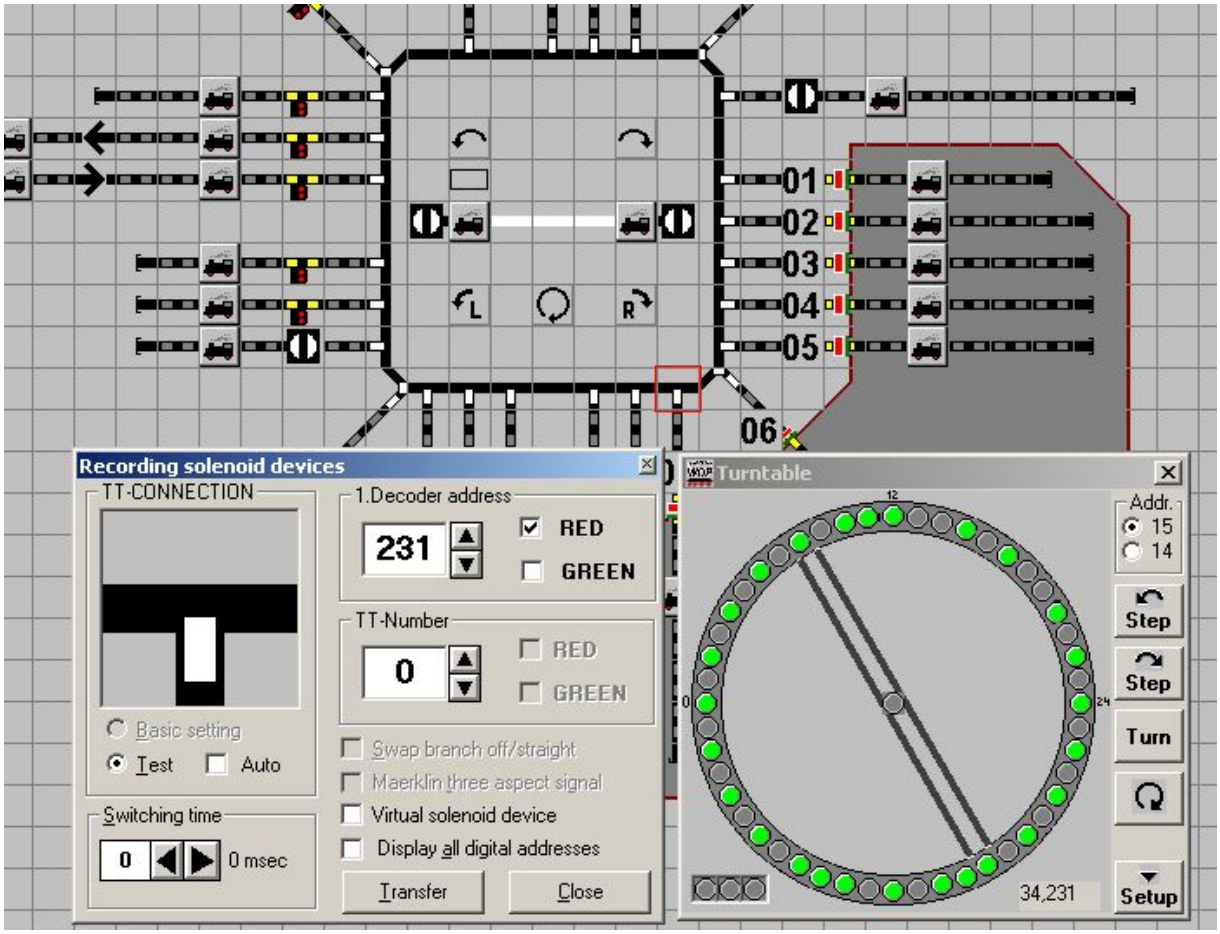
- Each track connection and command button is defined as a solenoid device: A click will carry out a function.
- Your turntable should be programmed properly.
- In the right bottom of the turntable graphics (see chapter **14.2 / 14.7** and at the end of chapter **6.3.4**) you will find the addresses of all track connections and command buttons; in the form „33.xxx“ or „34.xxx“. „**33**“ = green, „**34**“ = red and the three digit numbers “**xxx**” means the variable part of the address (in theory derived by Märklin keyboard #15, address-range 225-240, respectively #14, address range 209-224).



- The addresses of the track connections “**xxx**” will be registered at the first decoder address, if the prerequisite is “**34**”, just click on “**RED**”, if the address is starting with “**33**”, just click on “**green**” .
- The addresses of the five command buttons are **fixed** and will be shown after recording:

‘***STEP LEFT***’	= 33.227 (227 GREEN),
‘***STEP RIGHT***’	= 34.227 (227 RED),
‘***TURN***’	= 33.226 (226 GREEN),
‘***Turn RIGHT***’	= 34.228 (228 RED),
‘***Turn LEFT***’	= 33.228 (228 GREEN).

Click at the turntable layout to register a **track connection**: The window “TT-connection” will appear. Enter the address you see in the lower right corner of the turntable graphics (or which you have already noted) and click either “RED” (34) or “GREEN” (33), depending on the first number. By clicking on ***“Transfer***” this track connection is recorded.

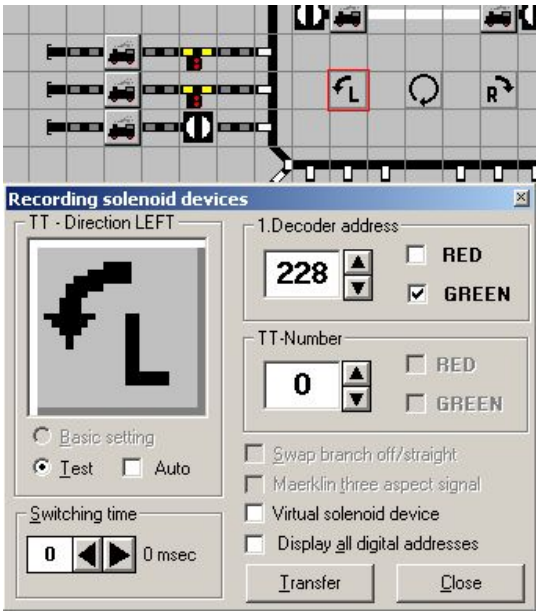


Hint!

If you have drawn more than one turntable or moving table into your track diagram, then you have to assign a number for **each** turntable or moving table, otherwise they can't be displayed properly.

For the second turntable or moving table you enter for example „1“ in the field „*DS/SB-Number*“.

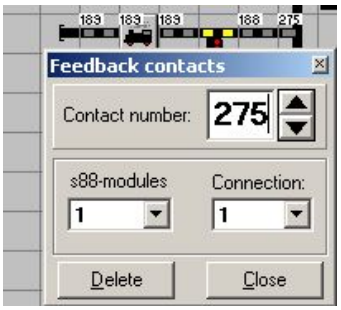
You can ignore the message „Digital address already used!“.



To register a **command button** click on its symbol at the turntable layout. A corresponding window will open and the appropriate address and the connection “RED” or “GREEN” is given as a pretext; You just need to click to “Transfer”.

7.7.1 Registration of turntable feedback contacts in the track diagram

With feedback modules you can get a real position feedback of your turntable. For this some mechanical changes are required. These are described in the Workshops #10 und #21 on the WIN-DIGIPET Homepage.



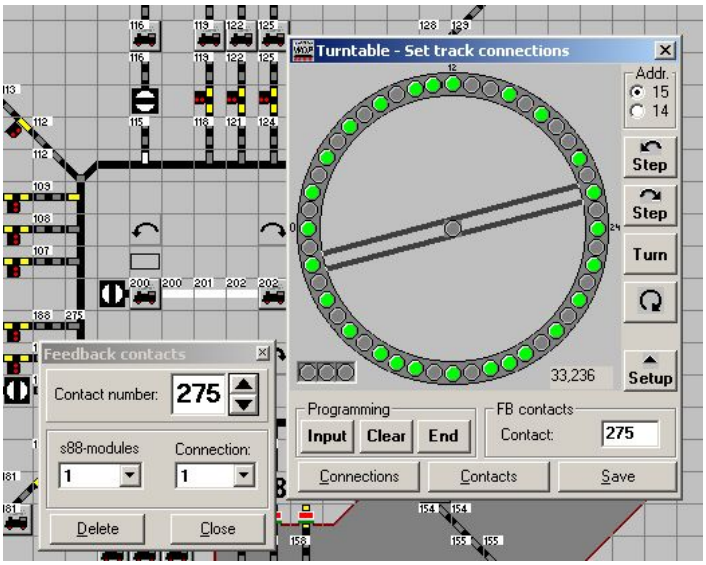
You record these feedback contacts in the same way in your track diagram as four normal track symbols as described in section **7.4**.

7.7.2 Registration of a turntable including addresses in the turntable graphic

Select the menu command <Turntable> or click on the symbol in the toolbar.

Open the turntables setup by a click on the button Setup and then click then ***on 'Contacts'***.

Click then on an existing, activated connector (illuminated in green) which is equipped with a feedback contact. The green dot is surrounded by a black frame, and in the field *"FB contacts"* the current number of this connector appears beside *"connection"* (clockwise, beginning on the left horizontally with "00" as described in section **14.2**).



In the contact numbers field on the right of it you can see a fictive contact number **0**. You have to register the correct contact number for this connector in this field.

In the same way you register the other feedback contacts to the rail connectors of your turntable.

You change a contact number by overwriting, or delete it by entering **0**.

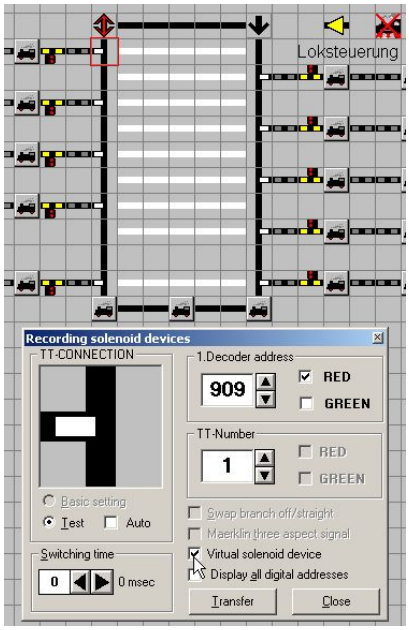
Tip!
For the registration of the feedback contacts the window for assigning feedback contacts should be still open. By this you can see the registered feedback contacts, as shown in the picture.

When operating your turntable on your model railroad layout (see **14.9**), an occupied contact/connector is indicated by a **red** circle in the turntable graphic.

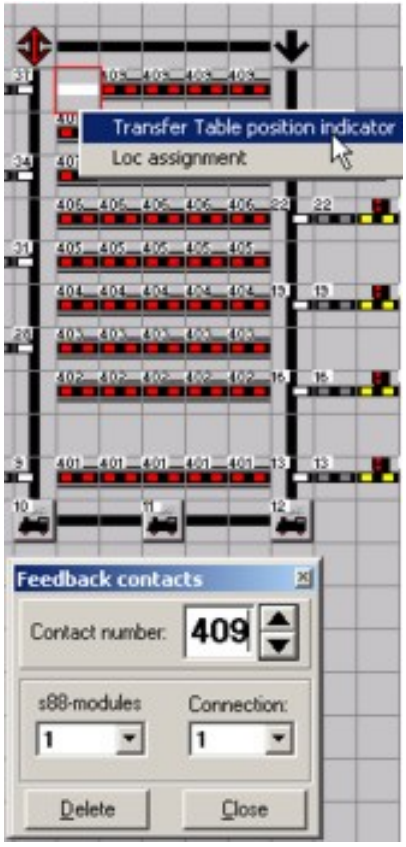
7.8 Registering a transfer table including feedback contacts in the track diagram

You have created a transfer table in your track diagram as described in **6.3.1**.

In order to register, please, notice the following tips!

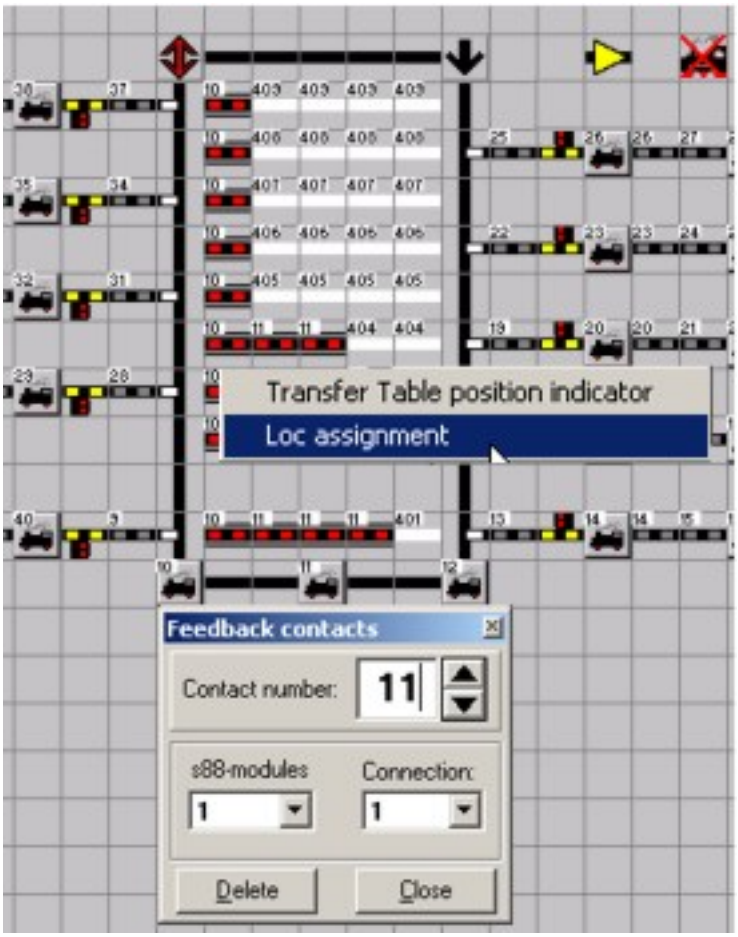


- Every rail connector and every command button is conceived as a magnet article: a click on it releases a function.
- The addresses of both k84 decoders, as well as the 9 feedback contact numbers for the table's feedback (wiring according to Workshop #17 in the Win Digipet forum) must be known.
- At first the solenoid device-addresses of the used decoders are registered to the k84 connectors (in this example the k84 for the direction control has the solenoid device address 16).
- Then the virtual magnet article-addresses 901-909 are assigned to the 9 rail connectors in the track diagram editor. On this occasion, the counting begins always from the passageway rail with the address 901 (see picture). The addresses 901-909 are set by the program and cannot be changed.



- When assigning the solenoid device addresses to the rail connectors of the transfer table, you should always check " *virtual solenoid device*". As a matter of form you should check "red" for the left and "green" for the right rail connectors.
- And check „*Show all addresses*" to get a better overview.
- You should answer the error message „Digital address(es) already exists in your layout !" after the assignment of the second rail connector with "Yes".
- Afterwards the respective back registration contacts are associated to the 9 possible transfer table positions in the track diagram. By this the correct position of the transfer table is displayed in the track diagram. The example shows the assignment of feedback contacts 401 to 409 to the transfer table rails. When clicking on a transfer table rail a context menu opens and have you to select <position feedback >.

- Now you have to assign also for all 9 transfer table position tracks, the feedback numbers for locomotive occupation. In the small selection menu, that appears when you assign feedback numbers to the transfer table track symbols, you have to select <Loc assignment>.

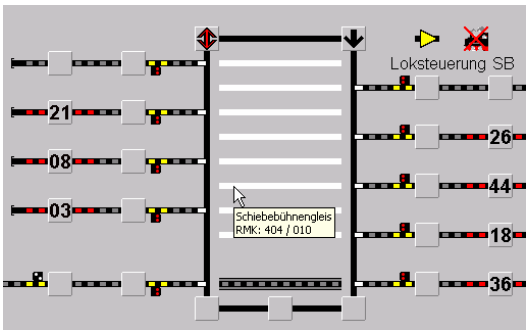


- At last you should also assign all 10 possible track connector symbols to the feedback contacts for transfer table position.

After saving and leaving the track diagram editor, in the main program the transfer table should indicate its current position. In our example the transfer table is positioned at the straight-threw-track.

When moving the mouse of the several transfer table symbols, a tool tip shows you all your registered data.

After leaving the track diagram editor, the position of the transfer table should be displayed in the track diagram of the main program. In the example it is positioned at the passageway rail.



If you move the mouse over the transfer table in the diagram, the tool tip tells you all data of the transfer table as shown in the picture.

7.9 Save data

Click on <File> in the menu bar followed by <Save> or on the switch in the toolbar.

8 – ROUTES-EDITOR

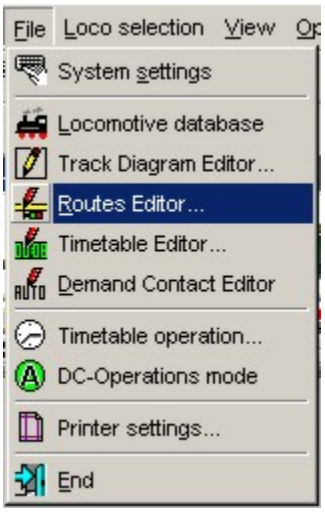
8.1 General

Having completed your track diagram and recorded your solenoid devices and your feedback contacts, the next step is to create your routes .

The routes are the basic for controlling your digital model road with **WIN-DIGIPET 9.0**, in the manual as well as in the automatic control. You can define an unlimited number of routes. It is advisable that you consider your routes in more detail beforehand and note them down in outline.

TIP!
First create for all block systems a route. These block systems are always the track symbols between two signals. They begin at the train number symbol before the start signal and end at the signal behind the train number symbol of the destination contact, as a substitute also behind the train number symbol of the destination if no signal exists (see **6.1**).

Click on <File> <Routes-Editor> or on the symbol in the toolbar.



The “Routes Editor” – window will open, with the pull-down-menu <Routes> and six additional index cards as well as the pull-down-menu <Options>.

In the routes editor you can easily meet the requirements, to ride your locomotives automatically along up to two partial routes of **ONE** route with several and practice-oriented speeds, for example up- or down a hill, winding tracks or other specific situations (“track related fine adjusting”), see also **8.7.3**.

8.2 Recording routes

When you open this program part for the first time you will find an example entry for the first record; it cannot be deleted but only overwritten.

But you know this already from the quick entrance - section Routes editor.

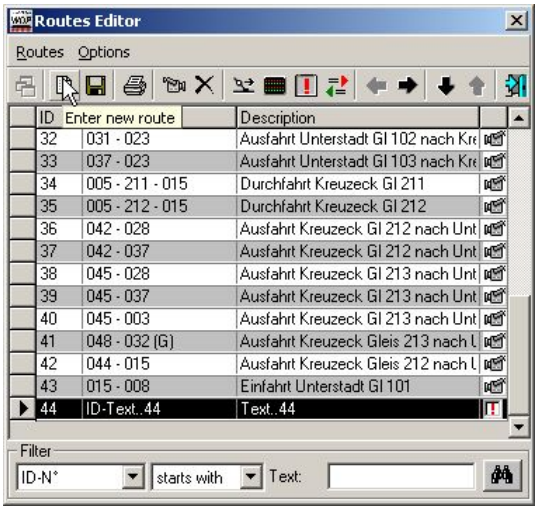
To record a new route click on the menu <Routes> <New> or on the symbol in the toolbar.

In the routes editor a new row with an ID text assigned by the program and a suitable description is inserted.

On the right besides you see a red exclamation point, as a distinguishing mark, that the route has not been recorded until now .

Of course, the program has to identify each individual route.

For this purpose it uses the „ID-Text“ (**Identification text**), an entry of not more than 15 chars. of your choice. Enter it here.



Important!
With the "ID text" you may not use the following characters „äöü@§$%&/(){[]}\“, period and comma, however, underlining character(_) and the blank character are allowed.

TIP!
In the field "ID text" you enter e.g. 033 - 095 (the feedback contact numbers of start and destination).

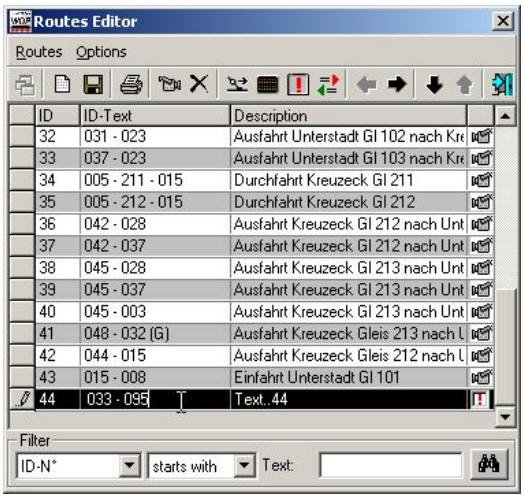
This has the big advantage that you can search with the different sorting functions later very fast and straight for routes.

In the „Description“ panel enter a text of up to 50 characters.

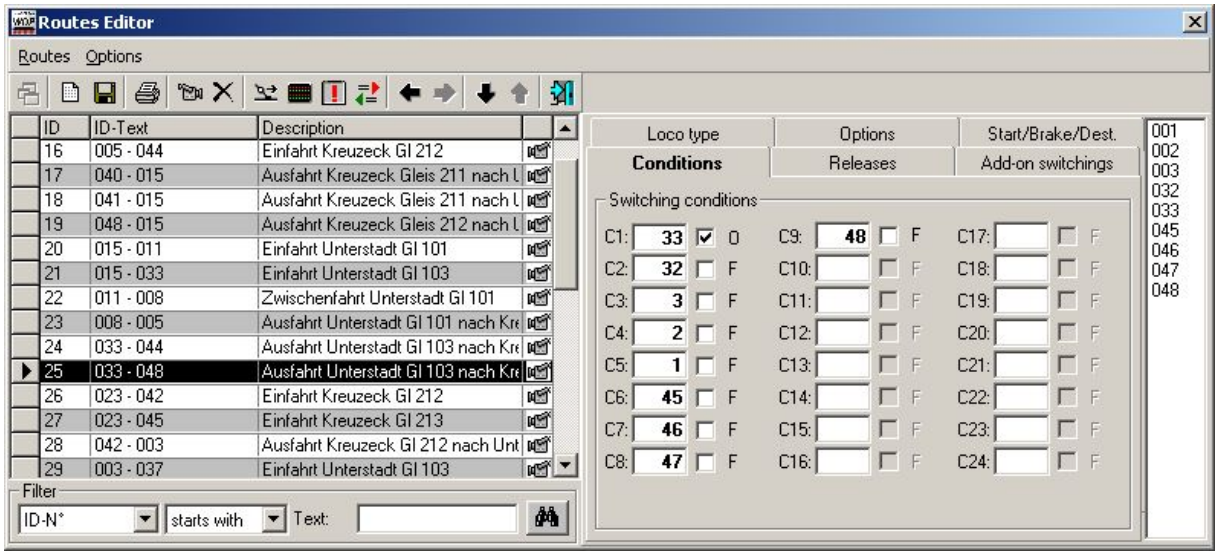
For further identification each route receives an ID number which, however, is not displayed in the main program.

As soon as the ID text and description are entered, the switch appears. Click on it or on the menu <Routes> <Save>: The new route is transferred into the routes list.

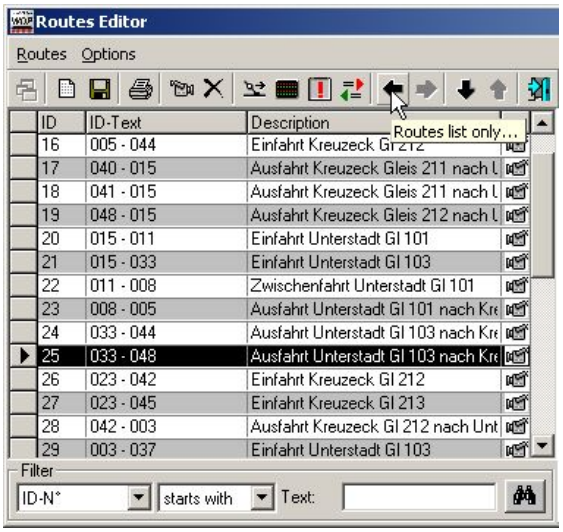
If a route was already recorded, a camera symbol appears next to the description.



8.3 Routes list



The list of routes is in the left, next to it, in the right, there are six additional index cards. This makes it possible to check the “conditions”, “releases”, “add-on-switching”, “options”, “start/braking/destination” and “loco type” for a recorded and marked route, by clicking on the corresponding index.

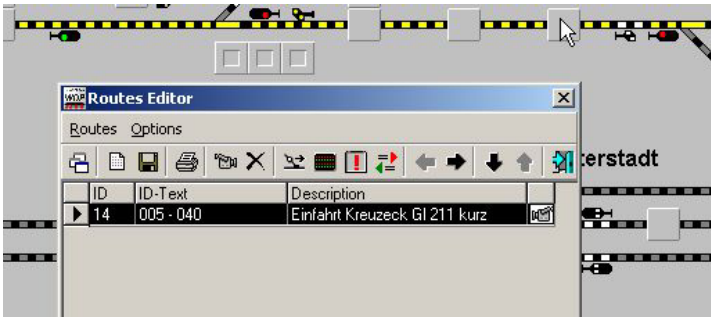


You can fade out the index cards or you can move it to the bottom. To do this, please use the four black direction arrows in the right of the menu bar. Which movement will be done can easily be noticed via the “tool tip-text” at each arrow.

The feature “Fade out of tab-set”, will reduce the general view. You can use this to get a better overview about your track layout diagram, if you are looking for a specific route in the routes list.

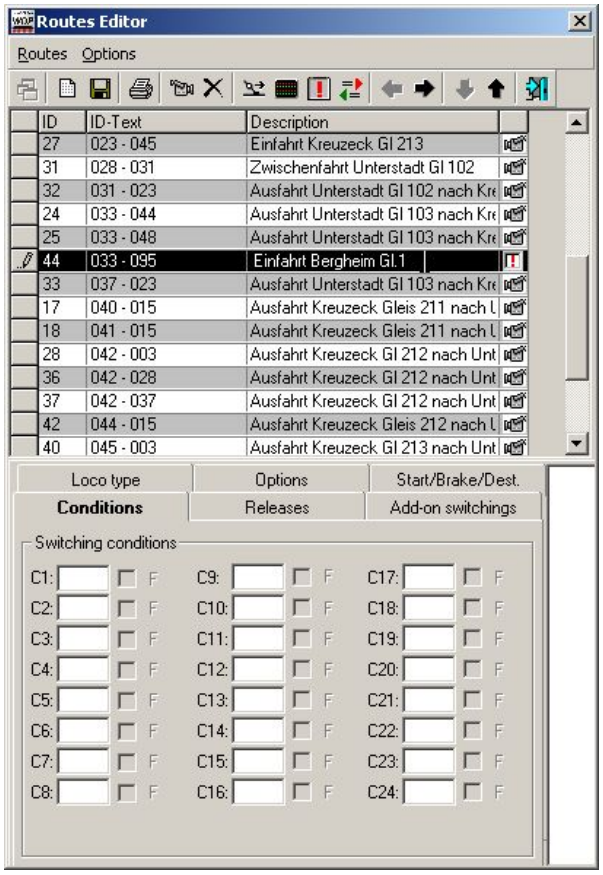
TIP!

If you have an extensive route list, repeated clicks with <u>the right mouse button</u> on the start train number symbol and then on the destination train number symbol (start/destination-function) will load the desired route directly.



The route is under laid in the track diagram in yellow and in the route list only the routes with these starting and destination contacts are listed.

If the tabs are arranged below the route list, nevertheless, the filter function (see **8.13**) cannot be activated.



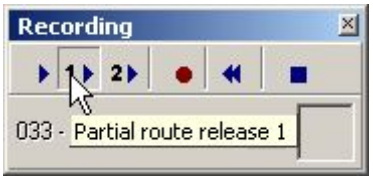
You can edit this route list comfortably. Select the concerning route by a click on its list row - it will be under laid in black. After a second click you can edit the text.

In addition, you see a small writing pen left of the ID No..

For saving of your changes simply click on **another** row of the list (a confirmation request appears) or you click on the symbol in the toolbar.

8.4 Recording routes

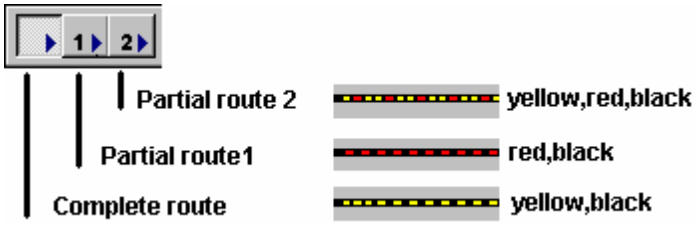
To determine the itinerary of the route, activate its line in the list- click on it- and then click on <Routes> in the menu and <Record> or on the switch in the toolbar.



A small window „Recording“ appears with 6 symbols, easily recognisable through „Quick infos“ on yellow strips. The ID text of the route to be recorded is displayed in the bottom line.

As long as a train travels through a route, all solenoid devices in that route are blocked. A crossover of other trains is not possible. The solenoid devices can only be made available for further train movements, when the train has reached its **Destination** within its route. This is achieved, once the **Destination** contact is activated e.g. „Released“ („Release condition satisfied“, see also **8.7.2**).

It is possible that the system may slow down, if there are very long routes containing many solenoid devices. To prevent this and also to make the train operations on the layout more interesting, two partial routes within the route can be defined and released, before the train has reached its destination contact in its route.



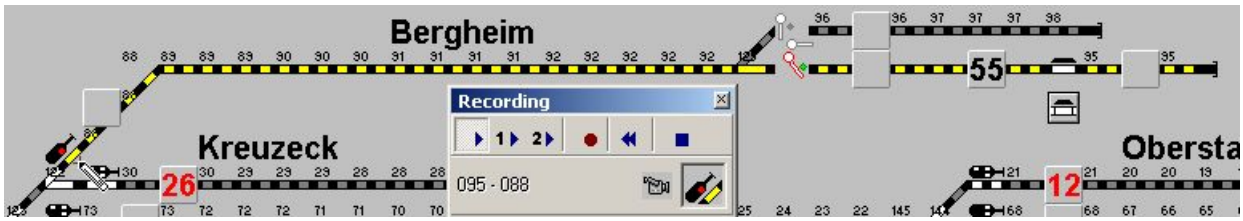
Three switches are available for this , 1 and 2. Click only on the left switch (main recording), if you create normal routes **without** partial routes and ignore the other two.

TIP!
In the routes editor you check in the menu <options> <Always display FB numbers>. Then the feedback contact numbers are displayed in the track diagram as small numbers for all symbols with feedback contacts.

The feedback contact numbers are also very helpful for the ID texts and names of the routes.

8.4.1 Recording routes without partial releases

Choose the suitable route in the route list and click on the symbol in the toolbar. In the example this is the route with the ID No. 53 and the ID text 095 - 088th. Press the left mouse button and record the route. Move the mouse pointer successively over all track symbols which should belong to this route, and click on every of them. You can drag the mouse pointer - with pushed left mouse button - also. The itinerary is illuminated yellow.



Now the recorded route should look like this. The inclusion of the left signal is important for the route's protection . In this case this is not compelling, because the turnouts - on the left of the red signal - are also used for the route protection.

Tip!
A solenoid device can be switched to desired state by clicking several times at it.

With the right mouse button you can delete the itinerary or parts of it by clicking or dragging.

If you click on the „Recording" window on 'Start again' , the complete route recording is rejected and you can start again.

If you are satisfied with the itinerary, click on the small window on ***'Save'*** . A message box appears with the question if you want to transfer the switching conditions from the route's recording automatically. If you recorded the route in the correct order of contacts from start to destination, you can click on '***Yes***'.

Thus the route is stored and the window „Track diagram editor" reappears.

8.4.2 Recording routes with partial releases

With long routes it makes sense to record the route with partial releases. As an example the route with No. ID 66 and ID text 033 - 095 is shown.

For recording a route with two partial releases proceed as follows:

- **Recording partial route 1**

  Click on , then on a free screen area, until the pencil is attached to the mouse pointer and record the track symbols, which should belong to partial route 1. These are the track symbols with the feedback contact number 33 on the left and on the right of the train number symbol and of course the train number symbol themselves; this is quite important. Afterwards you click on the signal right of this train number symbol and select the desired signal state by repeated clicks (green / yellow). Both track symbols are illuminated red and at the signal symbol a small **1** is displayed for the 1st partial release.

- **Recording partial route 2**

  Click with the left mouse button on the symbol and afterwards in the track diagram on the track symbols with the contact number 32. Furthermore you must click on turnout 97 with feedback contact number 124, the track symbol with the feedback contact number 31 and the turnouts 96 and 95 with feedback contact numbers 123 and 122.

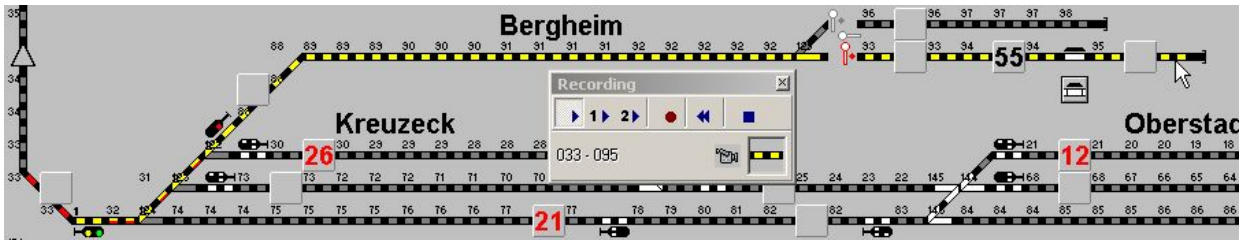
You have to select the correct state of the turnouts, otherwise the train would never reach Bergheim. The itinerary is illuminated yellow / red and at the three turnout symbols a small 2 is displayed for the 2nd partial release.

- **Recording the remaining part**

  Click with the left mouse button on the symbol and record now the remaining route from signal 61/62 to the buffer stop with the track symbol 95.

  Move the mouse pointer successively over all track symbols which should belong to this route, and click on every of them. You can drag the mouse pointer - with pushed left mouse button - also. The itinerary is illuminated yellow. You should take care about the desired state of the turnouts and signals by clicking several times on them.

Now the recording of the route should look like this.



The partial routes can be seen very well in the picture above and also the small 1s and 2s for the partial releases of the turnouts and signals.

If you are satisfied with the itinerary, click on the small window on ***'Save'*** . A message box appears with the question if you want to transfer the switching conditions from the route's recording automatically. If you recorded the route in the correct order of contacts from start to destination, you can click on **'*Yes*'**. Thus the route is stored and the window „Track diagram editor" reappears.

TIP!

Carry out the route recording very carefully and in the precise order of the contacts to be driven. By this you can save a lot of work and answer the above question ***with 'Yes'***. Then the set conditions, the destination release and the start, brake contact and destination contact-entries in the suitable tabs are filled in by the program. The precise order of the contact entries is very important for the order of events in the simulation.

The route will be displayed in the track diagram, if you click on a line in the routes list, which activates the route. This gives you a good overview of your recordings.

8.5 Recording routes automatically

In WIN-DIGIPET 9.0 you have the possibility to record your routes automatically. This prevents you from a lot of work, because the feedback contacts are recorded in the right order for the simulation.

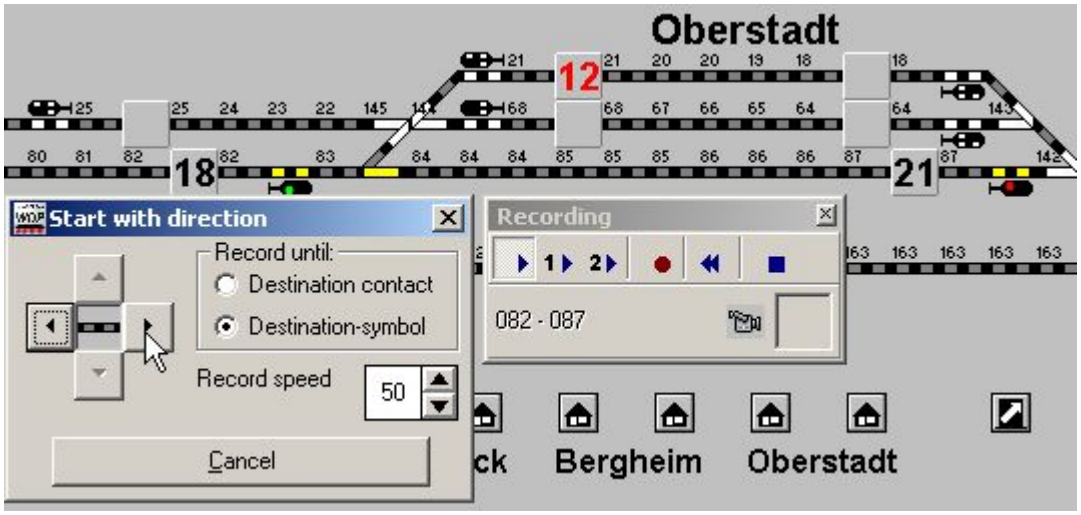
Nevertheless, the automatic route recording should be described only after the description of the manual route recording, because for the understanding of the automatic recording the understand the manual recording of the routes is very important.

8.5.1 Recording routes without partial releases automatically

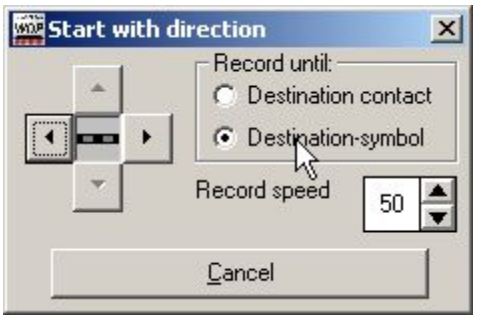
Select the desired route in route's list and click on the symbol in the toolbar. In this example it is the route with the ID No. 57 and the ID text 082 - 087.

Because the route should be recorded without partial releases, you don't have to make any settings in the window "Recording". Now you set in the track diagram with left mouse clicks the states of both signals at the start and destination of the route and also desired state of the turnouts. The setting is very important for the automatic route recording, otherwise **WIN-DIGIPET 9.0** can't recognize which way to follow.

For starting the automatic route recording you click with pushed Shift key with the left mouse button on the start-feedback contact 82 **left** of the starting train number symbol (here with locomotive 18 occupied) and afterwards with pushed Shift key on the destination-feedback contact 87 **right** of the destination train number symbol (here with locomotive 21 occupied).



After the mouse click appears a window „Start with direction“ with options, the options are explained by tool tips as usual which are displayed when the mouse stays over the different controls.



You can adjust the recording speed to from 10 to 200 msec.

The radio button "Recording to: “ leave on the default setting *"Destination symbol"*, because you had clicked with the left mouse button already on destination feedback contact.

The difference between both settings is the following:

- Destination feedback contact
  If you have chosen this, **WIN-DIGIPET 9.0** records always the route up to the last destination-feedback contact, even if you have clicked only on the first destination-feedback contact.
- Destination symbol
  If you choose this option, **WIN-DIGIPET 9.0** records the route always only up to the selected destination symbol. This is important for recording partial routes.

In the box between four start arrows the start symbol of the route is displayed. The eligible start directions of the automatic route recording are displayed, the other directions are deactivated. This setting is always dependent from the selected symbol (see **6.3.8**).

If you have carried out all settings, click on the direction arrow (in the example on the arrow to the right) and the automatic route recording starts. The small window „Start with direction “ disappears after the click on the direction arrow. If you have set the recording speed to 200 msec., you can trace the recording on your monitor very well (see **8.4**).

Now the automatic route recording should look like this and with a click on the red button the route recording is stored. You should answer the confirmation request concerning the switch conditions etc. with ***'Yes'***.

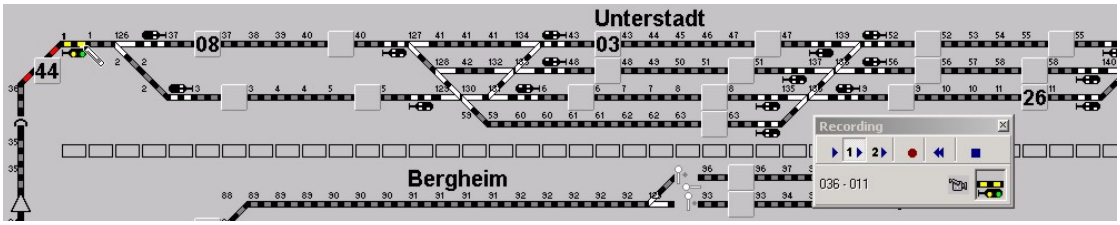
8.5.2 Recording routes with partial releases automatically

It is very often useful to split long routes into partial routes. As an example the route with the No. ID 51 and the ID text 036 - 011 will be explained.

You can record a route with three parts as follows:

- **Recording partial route 1**

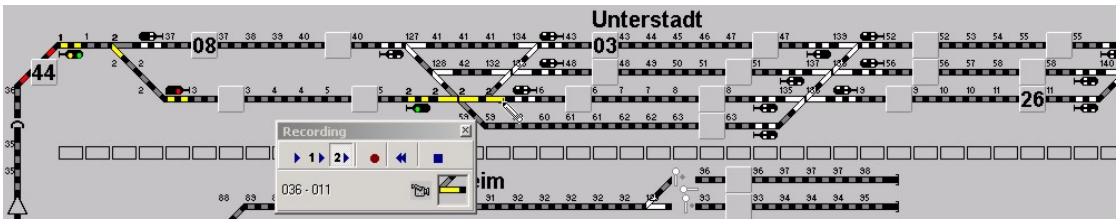
  Click on 1▸, then on a free screen area, until the pencil is attached to the mouse pointer and record the track symbols, which should belong to partial route 1. These are the track symbols with the feedback contact number 36 on the left and on the right of the train number symbol and of course the train number symbol itself; this is quite important. Afterwards you click on the signal right of this train number symbol and select the desired signal state by repeated clicks (green / yellow). Both track symbols are illuminated red and at the signal symbol a small **1** is displayed for the 1st partial release.



  Because here only few symbols had to be selected for the 1st partial route, the automatic route recording was not used, because it would not have been simpler or faster.

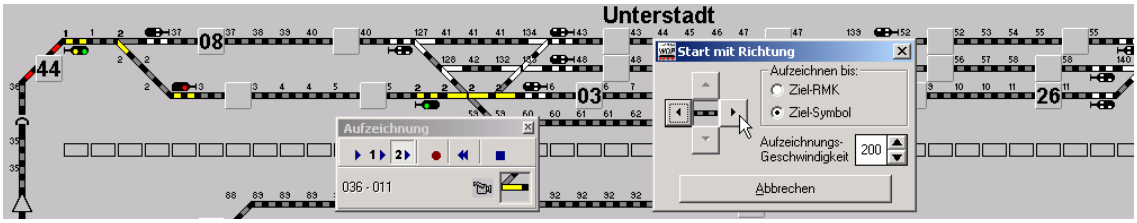
- **Recording partial route 2**

  Click with the left mouse button on the symbol 2▸ and afterwards switch both signals in the track diagram of the itinerary to desired state (red and green). Now you switch with the left mouse button the turnouts for partial release 2 as displayed in the following.



  For starting the automatic route recording you click with pushed Shift key and the left mouse button on the starting feedback contact 1 on the right of the starting signal (besides the train number symbol with the locomotive 44) and afterwards with pushed Shift key on the destination-feedback contact 6 left of the train number symbol with the locomotive 03.

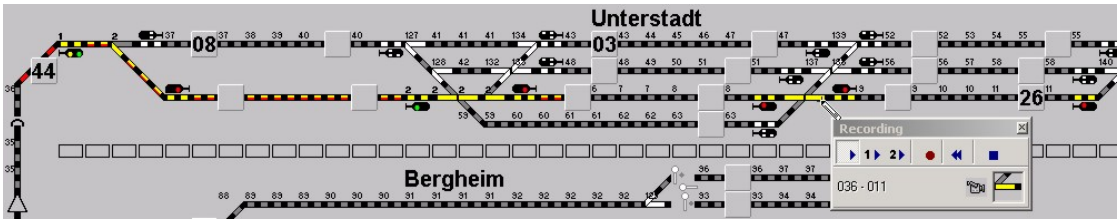
  After the click a window „Start with direction“ opens with the selections already explained in section **8.5.1**.



If you have carried out all settings, click on the direction arrow (in the example on the arrow to the right) and the automatic route recording starts. The small window „Start with direction " disappears after the click on the direction arrow.

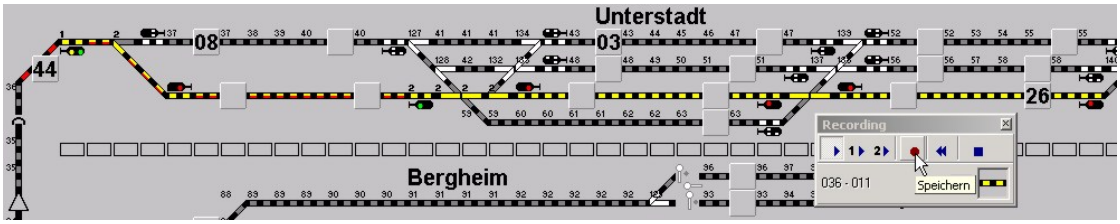
➢ **Recording the rest of the route**

Click with the left mouse button on the symbol and afterwards switch the last four signals in the track diagram of the itinerary to red. Now you switch with the left mouse button the two turnouts for the rest of the itinerary as displayed in the following.



For starting the automatic route recording you click with pushed Shift key and the left mouse button on the starting feedback contact 6 and afterwards with pushed Shift key on the destination-feedback contact 11 right of the train number symbol with the locomotive 26.

After the click the window „Start with direction" appears again and the automatic recording starts after a click on the button to the right.



The automatic route recording should look now like this and after clicking on the red record button the recording will be saved. Again the well known question explained in section **8.4.1** appears and should be answered with **'*Yes*'**.

8.5.3 Recording routes with interruptions automatically

When creating a track diagram, this track diagram is often interrupted by bridges, hidden stations, tunnels or different layers.

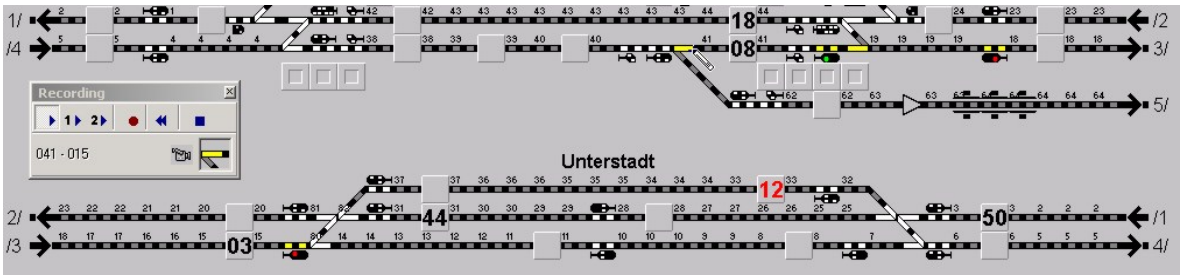
For recording routes using such interrupted itineraries you have two possibilities, which will be explained in the following:

- Recording with several steps
- Recording using jump labels (see **6.3.8**).

1. Recording with several steps

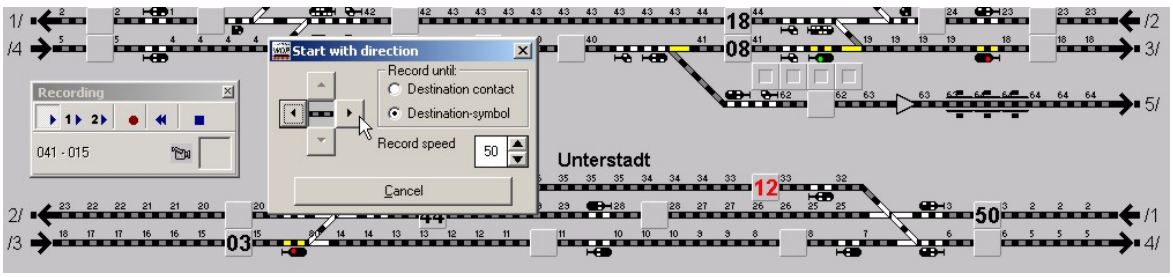
The following track diagram is interrupted, because it was diverted in to two horizontal parts for visibility reasons. In the example the route should start from the train number symbol, actually used by locomotive 08, and end at the train number , actually used by locomotive 03. In the track diagram the corresponding interruptions are marked by the direction arrows and the texts ”3/” and “/3”.

Select the corresponding route in the route list and click on the symbol in the toolbar. In this example it is the route with ID-Nr. 18 and the ID-Text 041 - 015.



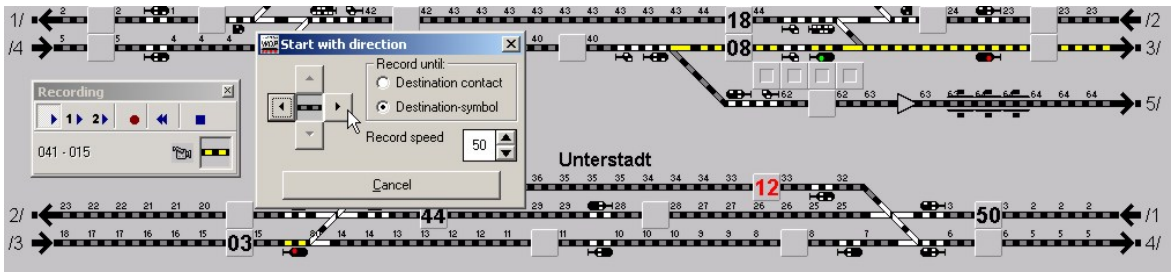
The route should be recorded without partial releases, so you don’t have to make any changes in the recording window. Switch now the both turnouts and the three signals of the itinerary to the displayed state. The turnout left of the start feedback contact is important for the tour, because otherwise the wagons of the train could drive into the wrong direction.

For starting the automatic route recording you click with pushed Shift key and the left mouse button on the starting feedback contact 41 left of the train number symbol, actually used by locomotive 08, and afterwards with pushed Shift key on the feedback contact 18 left of the direction arrow labelled with „3/“.



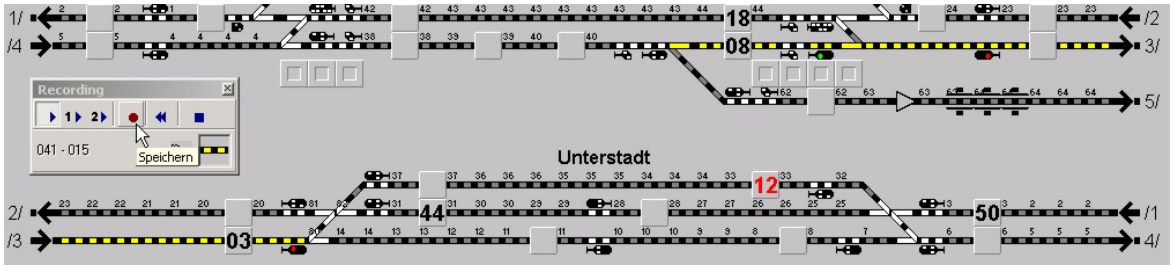
After the click the window „Start with direction“ appears again and the automatic recording starts after a click on the button to the right.

The automatic recording runs until it reaches the direction arrow with the interruption.



For continuing the automatic route recording you click with pushed Shift key and the left mouse button on the feedback contact 18 right the direction arrow labelled with „/3“ and afterwards with pushed Shift key on the destination-feedback contact 15 right of the train number symbol, actually used by locomotive 03.

After the click the window „Start with direction“ appears again and the automatic recording starts after a click on the button to the right.



The automatic route recording should look now like this and after clicking on the red record button the recording will be saved. Again the well known question explained in section **8.4.1** appears and should be answered with **'*Yes*'**.

Tip!
The automatic recording even is diverted in more steps if this is necessary for your track diagram.

2. Recording using jump labels.

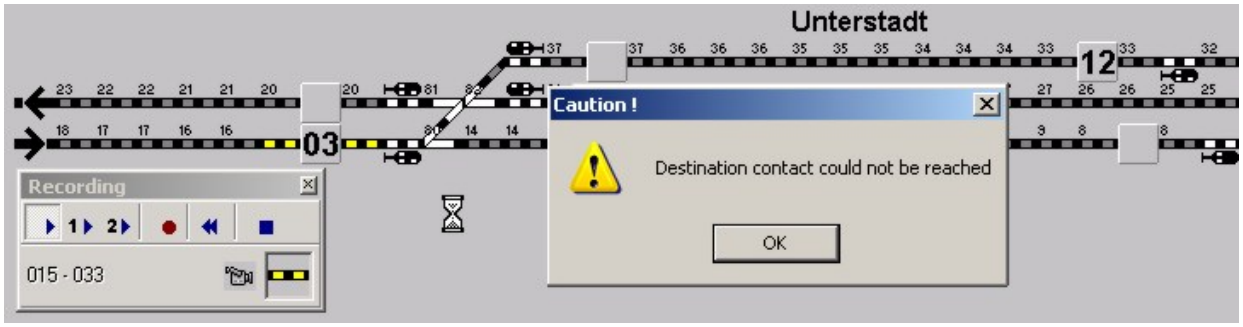
If you want to record many routes covering such interruptions, you should define jump labels in the track diagram editor (see **6.3.8**).

IF you have defined such jump labels (red and green), the automatic recording can be performed without diverting the recording into two parts as described under **1.**.

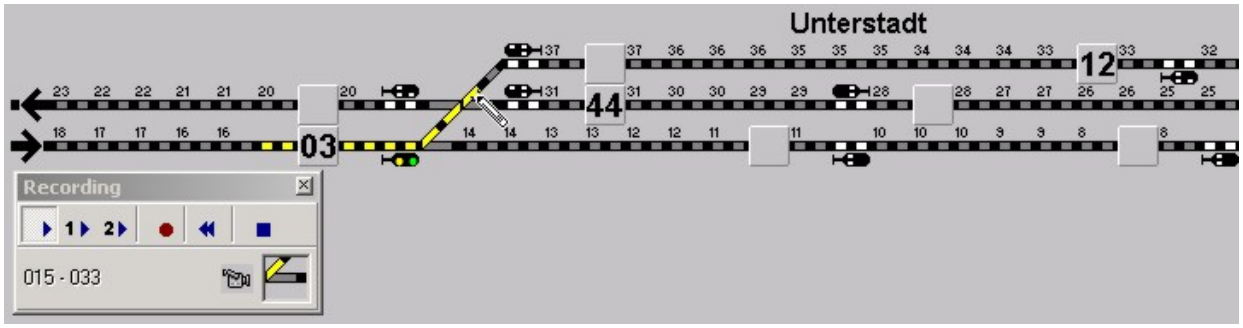
8.5.4 Interruptions during automatic route recordings

Before starting an automatic route recording you should switch all turnouts to their desired state. If you have forgotten this and **WIN-DIGIPET 9.0** does not know how to continue (see example in the following, where the itinerary could continue in two directions).

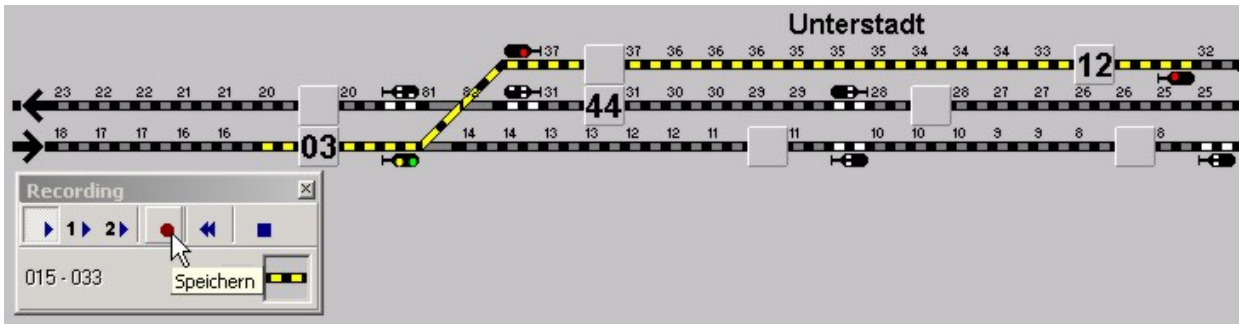
In this case the automatic route recording is stopped and the following message will be displayed.



You can click now on **'*OK*'** and continue the recording manually: Switch the signal to "green/yellow" and the turnout and the crossing to the displayed state.



For continuing the automatic route recording you click with pushed Shift key and the left mouse button on the track symbol without feedback contact right of the yellow turnout and afterwards with pushed Shift key on the destination-feedback contact 33 right of the train number symbol, actually used by locomotive 12.

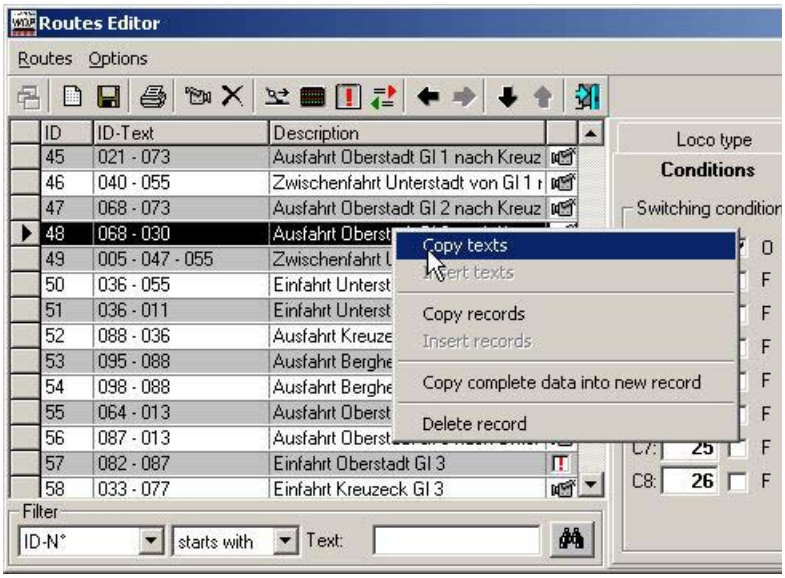


To complete the recording switch both remaining signals of the itinerary to red and press the red button in the record window to complete the recording. Again the well known question explained in section **8.4.1** appears and should be answered with **'*Yes*'**.

Information!
For the automatic recording of the route it is irrelevant if you switch the signals to desired states before, during or after the automatic recording, but we suggest doing this when switching the turnouts.

8.6 Modifying, copying, inserting routes

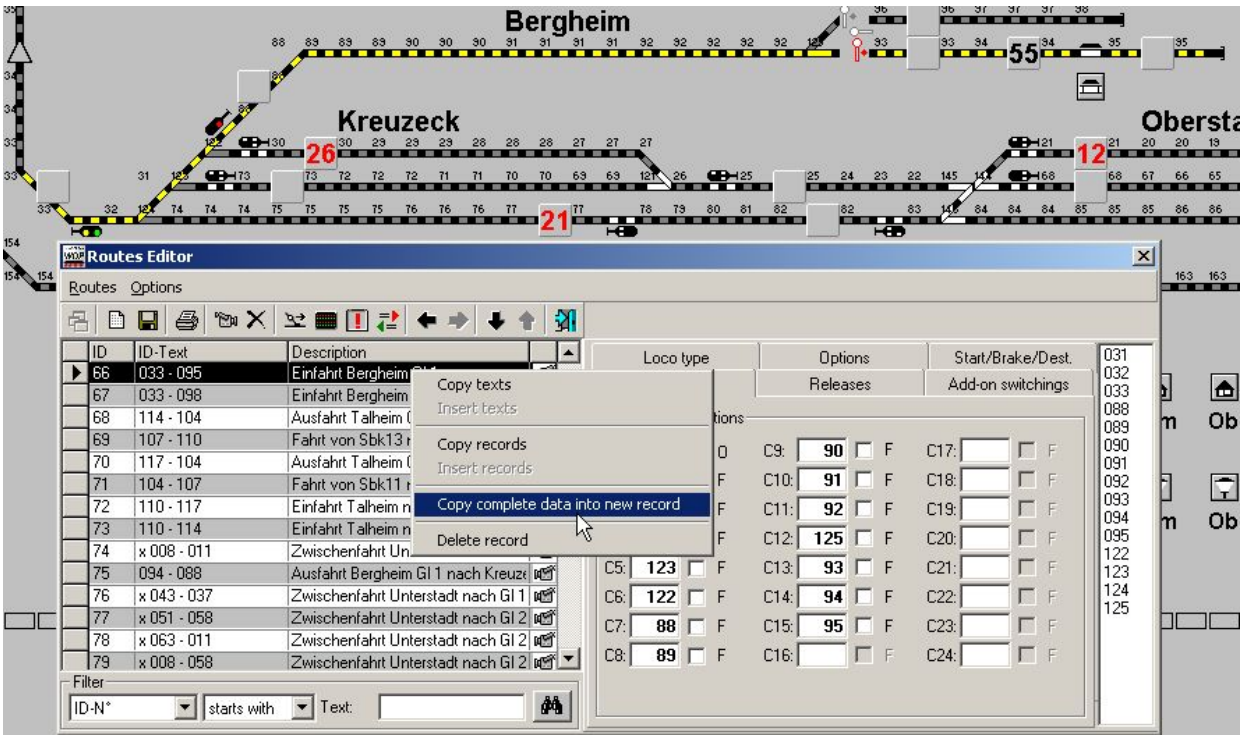
For this purpose, activate the relevant route- click at its line in the list- and click on the menu 'Routes' and 'Record' or on the switch in the toolbar. Carry out the changes, using the mouse button, as described above.



If you click on a list row with the right mouse button, a context menu with different commands opens as shown.

Through <Copy text> you can save the text of this line in the list into the memory. Further, you can activate another line in the list and select it through the right mouse button - <Insert text> and copy the text into the other line in the list by clicking on it

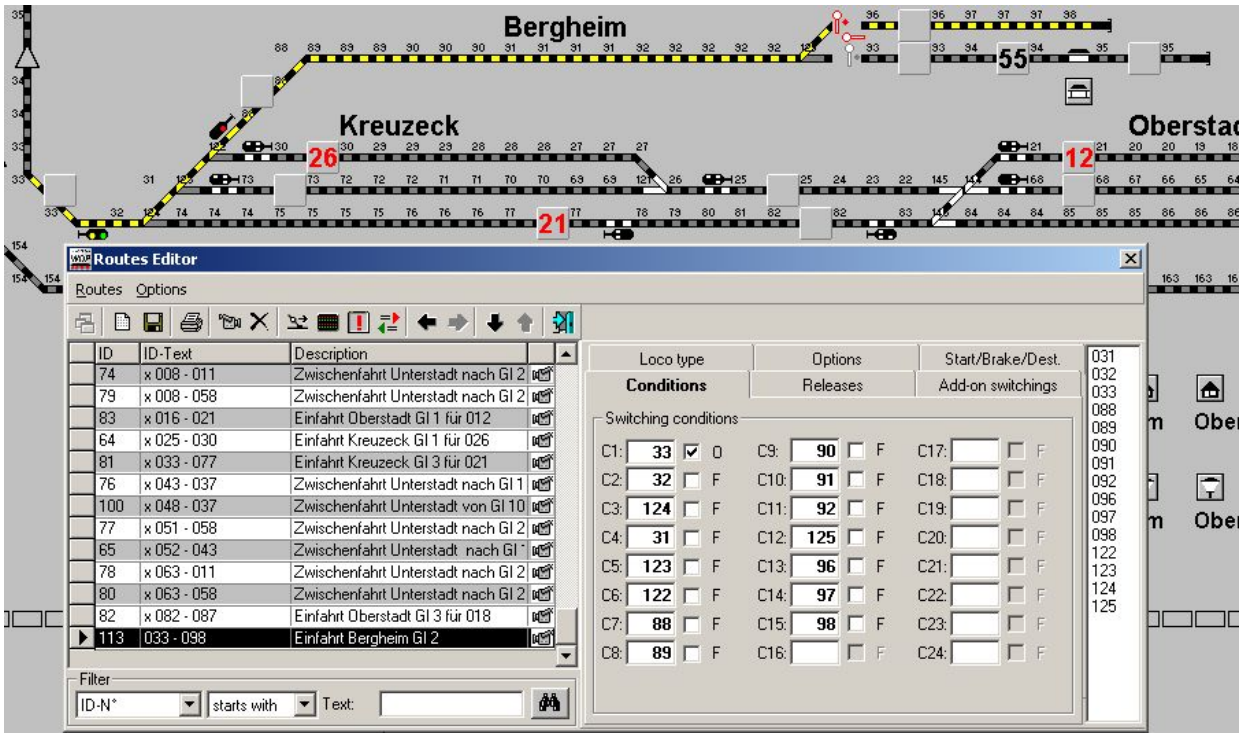
Through <Copy recording> you can save the complete route recording (not the text) of this line in the list into the memory. Further, you can activate another line in the list and select it through the right mouse button - <Insert recording> and copy the complete route recording into the other line in the list by clicking on it.



In the example above you have a long route starting one track symbol **before** the train number symbol in the lower left corner and ending at platform 1 of the station Bergheim.

For creating an additional route to platform 2 it is possible to copy the route to platform 1 and modify it afterwards.

Just copy the complete data record in a new. This is new record is displayed in the list box at the bottom with all data, like the original data record, but with a red exclamation point. Change the ID-Text and the ID-Text accordingly and correct **the complete itinerary** for the way to platform 2 using **'*Record route*'**.



You can also change just the different parts of the itinerary, but then you should answer with "No" to the well know question described under **8.4.1** and afterwards you will have to correct all the data on the index cards manually.

You delete a route, or just parts of it, if you click with pushed <u>right mouse button</u> on the rail pieces or solenoid devices to be deleted or move the mouse with pushed <u>right mouse button</u> over several of them.

<u>Important!</u>
I copy routes as described above and change parts of it, you should take care to make the necessary change on all index cards of the route editor. This is very important an error-free operation of **WIN-DIGIPET 9.0**.

And please remember to start a route always one track symbol **before** the start train number symbol and end it **at** the destination signal.

8.7 Recording switching conditions, starting/destination and release contacts

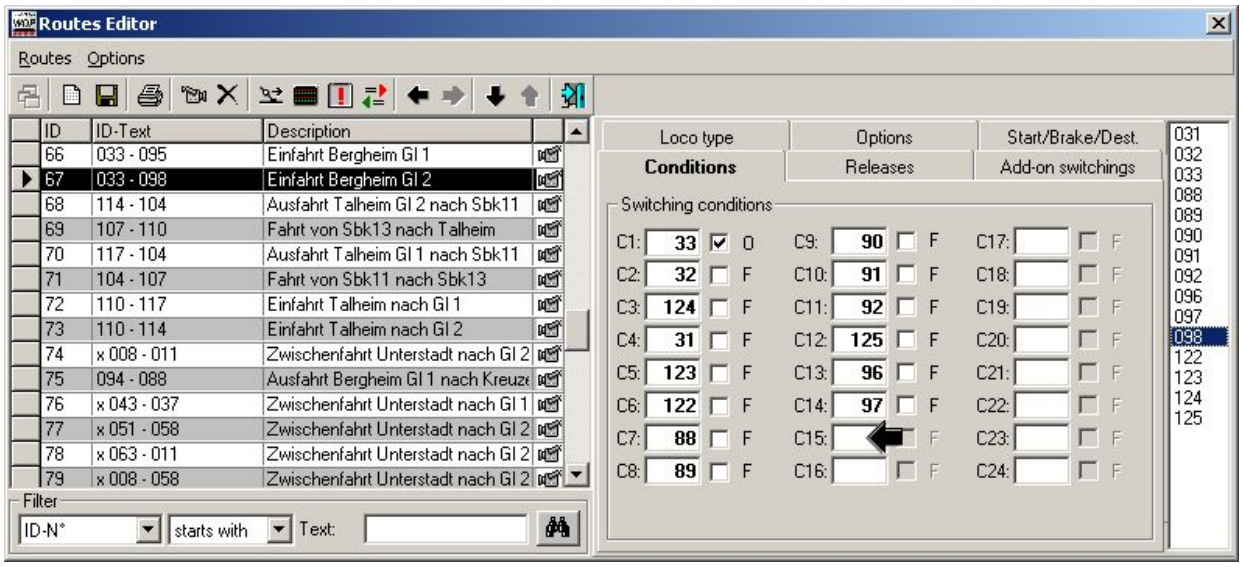
Important notice:

It is mandatory to enter the **switching-conditions**, **start-** and **destination contact** and the **release-conditions** for **every** route, otherwise a smooth operating will **not** be guaranteed. It is optional to enter any **add-on-switching, loco type or options**.

8.7.1 Switching conditions

If you have answered the question after the route recording with **'*Yes*'** all switching conditions were registered automatically by **WIN-DIGIPET 9.0** one the index card „Conditions". On this index card you can see the conditions to be fulfilled before the route can be switched.
In most cases these conditions will be...

- Start contact "occupied"
- All other contact of itinerary "free"
- The destination contact also "free"



On the right hand side you see the numbers (sort by number in ascending order) of all contacts recorded in the route. This makes it easier to insert the correct numbers into the input fields.

If you have answered the question, if you want to fill in the data automatically, with **'*No*'** you have to register the contacts C1 to C24 by yourself. Click on the contact number you want to enter on the left and/or in the middle of the index card. It will be underpaid with a blue bar. Keep the left mouse button pressed, drag the number to the entries panel and release the left mouse button ("drag and drop").

When registering the contacts manually you should remember to register the contacts the same order as in the itinerary due to simulation needs. You can also write the contact number into the entries panel via the keyboard. You can use the TAB-key to jump from one field to the next.

Define the locking of this route.

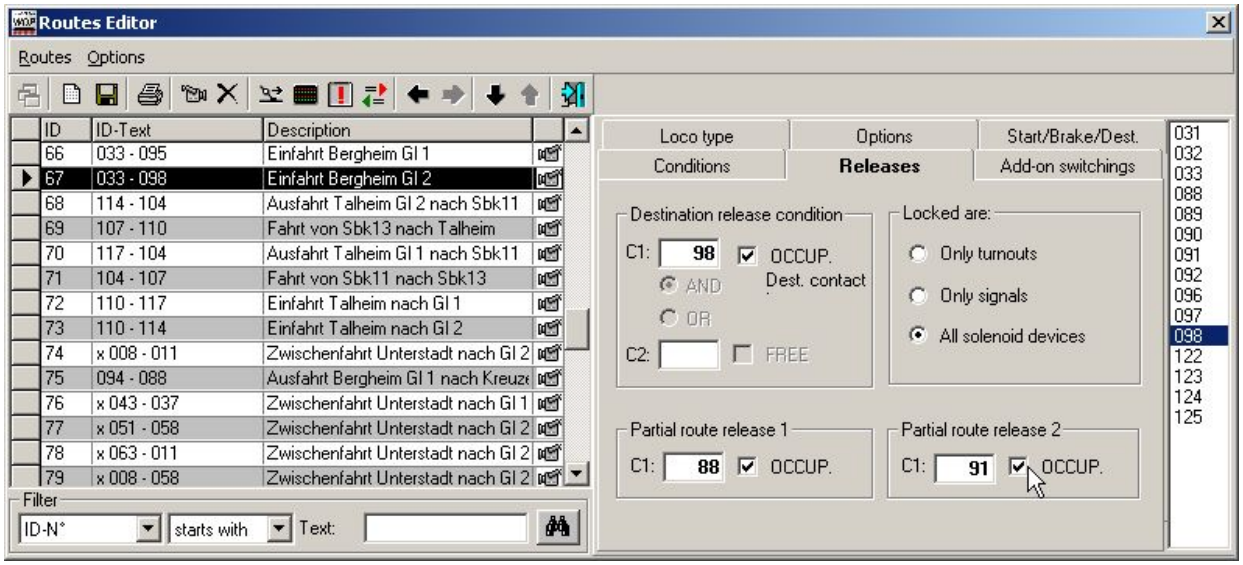
„Locking“ means: „The route may only be switched if contact X is free (or occupied)“ (possibly continued: „and if also contact Y is free/occupied, and if also contact Z is free/occupied“ ...etc.). You can define up to **24** locking contacts (C1 to C24).

You can expand the locking to all solenoid devices in the route. This is applied mostly. Or you can only lock signals or turnouts. Details in section **8.7.2**.

Normally it should be possible to switch a route if all its contacts are free („FREE“, without check), except its starting contact. This is occupied the locomotive which shall travel over this route („OCCUPIED“, checked).

8.7.2 Release conditions

Next click on ‘Releases’. On this index card you define the exceptions for the locking of routes and the conditions for their cancellation.



„Locked are:“
Here you define whether or not only signals, turnouts or all solenoid devices are locked. A block system, containing no turnouts, can be individually locked using „All signals only”.

Normally you should use „*All solenoid devices*“.

„ Destination release condition “
If you have answered the question, if you want to fill in the data automatically, with **'Yes'** the destination contact has been automatically registered with release condition “occupied”.

Important notice!
It's absolute necessary to enter the number of the destination contact and mark “OCCUP. Dest. Contact” in the upper left panel, otherwise trouble may occur during operations (routes won't be released).

Here you define under which conditions the locking is cancelled. „Release“ means: „Solenoid devices can be used elsewhere available from that route, if contact X (C1) free (or occupied)“ (possibly continued: „and when contact Y also free/occupied“). Up to 2 release contacts (C1, C2) can be defined, possibly with AND/OR function.

Release conditions ensure that the solenoid devices in the route are locked after the route has been switched. This could be all solenoid devices or only all signals or turnouts, depending what you had selected in „Locked are...“.

Another route (or any other itinerary), which contains a locked solenoid device- even if it is only one – of the switched route, can only be switched, if the release conditions are met.

This is the reason, why it is **necessary**, that each route has its **Release conditions**.

Normally they are: If Destination -„Contact (C...) OCCUPIED“, e.g. the train or locomotive has travelled through the route correctly.

Important change in Version 9.0!

If you have defined an **AND**-condition as release condition, the train will not be stopped and the route not released until both conditions are fulfilled.

This is very useful in the follow situations...

- You use long trains
- And many turnouts in a row
- And you have short piece of rail with a feedback contact after the last turnout

...then the train will not be stopped until the corresponding release condition (destination contact OCCUPIED and rail after the turnout FREE) is fulfilled. The same can be said for the release of the route.

This secures that the last wagon has left the last turnout before the train stops. This is just an example for this very powerful feature. Another example is a dead end station.

The route is deleted from the screen after the release conditions were met.

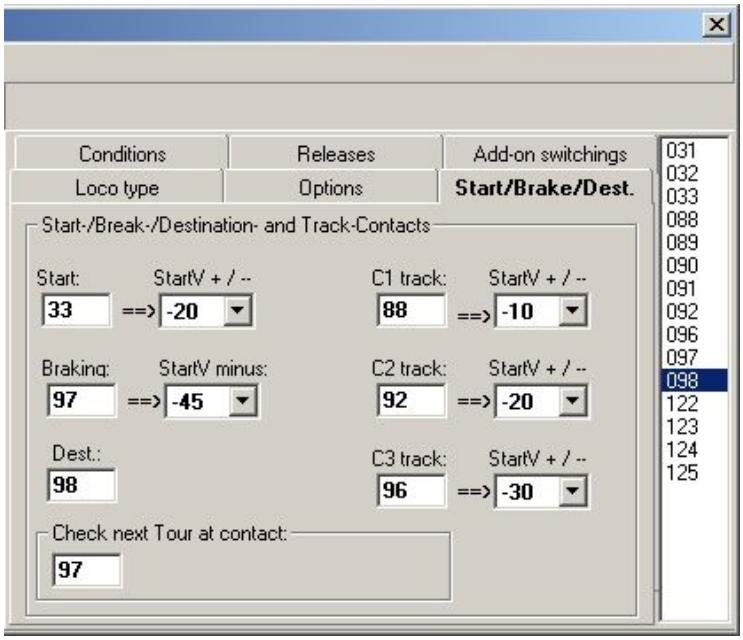
„ Partial route release 1 or **2 "**

Recorded partial routes in long routes can be released even though the train has not yet reached the destination release contact, as described above in **8.4.2.** Here you decide under which conditions the partial routes are released.

The route is deleted from the screen once the release conditions of the partial route are satisfied. It will be deactivated and all locked solenoid devices in the partial route are released.

8.7.3 Start-, Break- and destination-contact

It is **mandatory** to enter in context with the start-destination-function, see **18.5.1** – the **start**-, **breaking** and **destination contact** numbers of the registered route. This is required for at least the train number labels (see **18.14**) and all manual and automatic operations in **WIN-DIGIPET 9.0**, especially if you would like to use these operations without powerless tracks.



If you do not define a breaking contact, please enter 0 for "breaking" or delete any entries in this panel.

In “StartV +/-” you register how much the starting speed of your locomotives – locomotive-database, chapter **5.6** – will be reduced in absolute for starting and breaking and the itinerary contacts C1 to C3. The adjusted value will **always** be **added/subtracted** to/from the individual starting speed of a locomotive.

Possible values can from +70 to –70 in steps of 5. The value registered here will be therefore **added to** resp. **subtracted from** the individual starting speed of the locomotive.

Therefore you have to adjust the starting speed of your locomotives in chapter **5.6** always higher than the value registered in the routes for “StartV minus” at “Breaking”.

This “route related fine adjusting” makes it possible to assign different speeds for the locomotives at the starting- and breaking contact for each route.

Example:
Starting speed of a locomotive registered in the locomotive-database = 50
StartV +/- of a route = 70
Result: 50 minus 70 = **minus** 20, the locomotive will **not start!**

The program will interpret in operations value over 100% or lower than 0% automatically as 1000% resp. 0%.

In addition the program will display a warning message if it has calculated a value lower than 0% during the operations because of your settings in the locomotive database and the route editor.

Because of this you have to take care that your setting in the locomotive database and the route database fit together. The settings in the route database as shown in the example above would require a locomotive with a starting speed of at least “75”.

Important!
The three itinerary contacts must be settled before the break contact because otherwise they will be ignored after the break contact has been occupied.

When controlling the trains **without profiles** using the start/destination function, the automatic with demand contacts or the tour automatic the order of events would be as follows:

- The train is on its start contact and the loco address (=train number) is entered respectively visible in the train number display.
- The loco starts to move with its starting speed registered in the loco-database, **plus/minus** the value registered in the routes editor “StartV +/-” for this route.

- The **itinerary** contacts C1 to C3 are handled similar: When occupied the locomotive is (de-)accelerated with its starting speed registered in the loco-database, **plus/minus** the value registered in the routes editor “C (1..3) +/-” for this route.
- The **brake** contact handled similar: When occupied the locomotive is (de-)accelerated with its starting speed registered in the loco-database, the value registered in the routes editor “Brake minus” for this route.
- At the **destination**-contact the locomotive will be stopped only if the release condition is fulfilled (see notices under **8.7.2**).

Check next tour at contact:

When using the automatic data registering function **WIN-DIGIPET 9.0** will register here the brake contact of the route automatically. You should register this contact also when registering the contacts manually. You can also use any other contact, this will cause some problems in the simulation but not in “real” operations. This contact is used by the tours explained in **chapter 10** as demand contact for the next route.

Having completed all entries on the index card ‘Conditions’, ‚Start/Break/Destination’ and ‚Releases’, click in the menu <Routes> on <Save> or on the switch in the toolbar.

Important notice!
After an update to **WIN-DIGIPET 9.0**, users of the former version **7.x**, which have already used breaking contacts, have to check and eventually correct their settings, because the values have changed from percentage to absolute.

8.8 Add-on signal switching

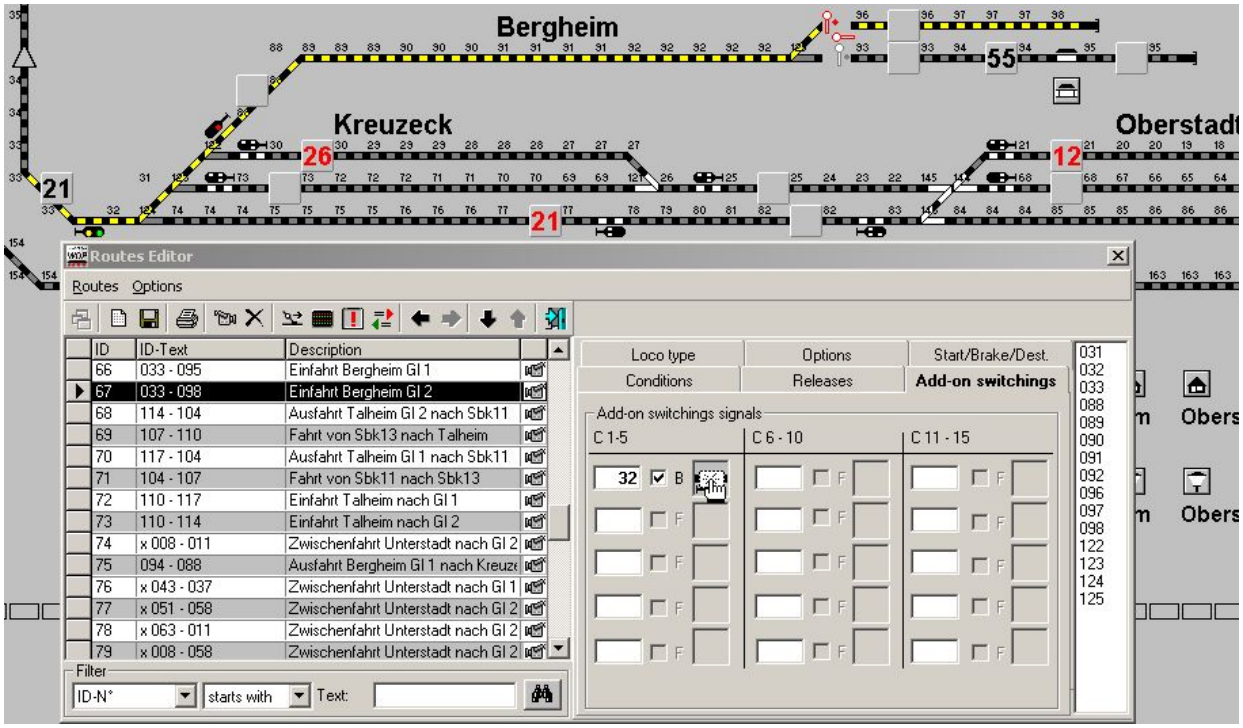
WIN-DIGIPET 9.0 makes it possible to switch additional solenoid devices, including a turntable (**except** double crossing turnouts), by switched routes.
Examples:

- “Switch the signal at the exit to red, after departure of the train”
- “Switch turnout #34”, etc.

- Or, for block operations, “After a train has entered a block section, switch the signal to red, to “protect” the train in the block section, “Switch a signal to green”.

You can switch up to **15** additional solenoid devices per route.

First enter the number of the contact at which the first add-on switching shall be carried out, e.g. „C1: If contact no.32 O(for OCCUPIED; F for Free), switch the adjoining symbol to red“.



Point the mouse pointer to the symbol of the track diagram where you want to have an add-on switching carried out. Press the left mouse button: The mouse pointer changes to show a hand with a signal symbol.

Keep the left mouse button pressed and drag this symbol to the display panel at the right, next to „Contact number FREE/OCCUPIED“ and release the left mouse button. The signal symbol “taken” from the track diagram appears in the display panel. Click on it- the mouse pointer changes to a hand- and sets the add-on switching you want for that signal (e.g. „signal red“).

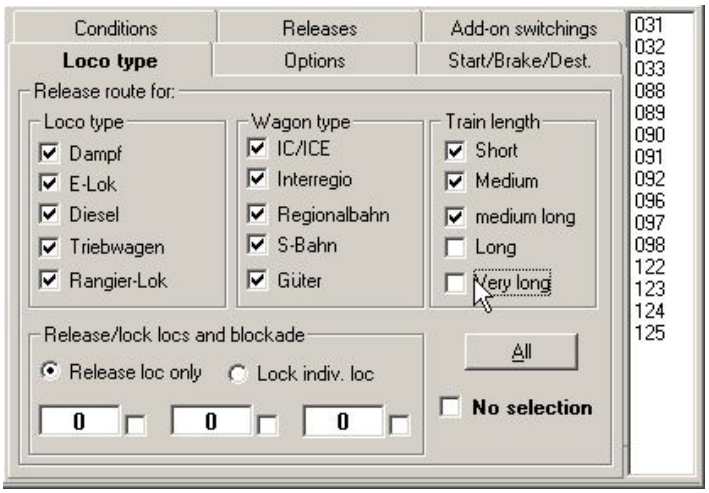
A signal at which an add-on switching is carried out bears a black frame in the track diagram, indicating add-on switching, when moving the mouse over the add-on-switching-picture-box in the editor.

A recorded add-on switching of this route can be deleted by deleting the contact number: Mark it (blue bar) and press „Remove“ or the “CR” key.

8.9 Loco type

Locked for Loco-/ wagon type:

You can lock routes for specific locomotives or trains as mentioned in the system-settings (see **4.9**); the input you made in section **4.9** will be displayed next to the selection boxes. You can also lock individual routes for specific train lengths (see **4.9**).



If you haven't checked any selection in the columns "Loco type", "Wagon type" or "Train length", which would make no sense, then automatically „*No selection*" will be checked.

If you enter "**no selection**", a route will not be checked about a specific loco- /train type.

Prerequisites are:

- You have activated the switch "Switch only, if route isn't locked by special loco/wagon type" in the "system settings / routes" (see **4.10.1**)

- You have registered up to 10 inputs in the text boxes to define your "rolling stock" as described in the system-settings in chapter **4.9.3** (if the default definition doesn't meet your requirements for your model railroad)
- You have assigned a "loco type" to each loco in the locomotive-database (see **5.1**)
- The digital address of the locomotive must be entered in the train number label of the start contact of a route.

The closing will be checked referring to the data in the locomotive-database of the locomotive at the start-contact and the settings in the routes editor for each particular route.

A warning will occur, if you try to switch a route via the "Switch + Ride - function", if the train is not appropriate to the selected route, but nevertheless, these routes can be switched manually (see **18.5.1-B**).

You will also get a warning if you assign a loco to a route which is not valid for this particular locomotive, in the timetable-editor (chapter **12**), but nevertheless, if selected for your timetable-operation, this line will be carried out.

During the operation of "Automatic with demand contacts" or the "Tour automatic", only appropriate routes will be switched by the system. This means for example: A Diesel-loco will never ride to the coal- or water station for steam-locomotives, if this route is closed for Diesel-locomotives.

Release/lock locs and blockade:

- Release loc only
  - If you enter here one or more locs the “Release for”-selection area will be deactivated and only the registered locomotive numbers will be allowed for this route.
  - If you check the field right of one or more of this locomotive numbers, the train numbers of this locomotive(s) will be switched to red in the “Automatic with demand contacts” when the destination has been reached. This feature can be used for a home-track-operation.
- Lock individual loc(s)
  - If you enter here one or up to 3 locomotives and check “No selection” this route will is allowed for using with all locomotives except this three.
  - But you can of course enter an additional “Release route for”-condition.

This index card gives you powerful features to release/lock routes for several trains. This guarantees, that no train goes the wrong way in manual as well as in automatic operation.

8.10 Options

Switch routes and solenoid devices via external switchboard:

You have to activate the feature “Switch routes and solenoid devices by push key (external switchboard)” in the system settings (see chapter **4.10**)

This provided, you can register the appropriate contacts in the routes editor.

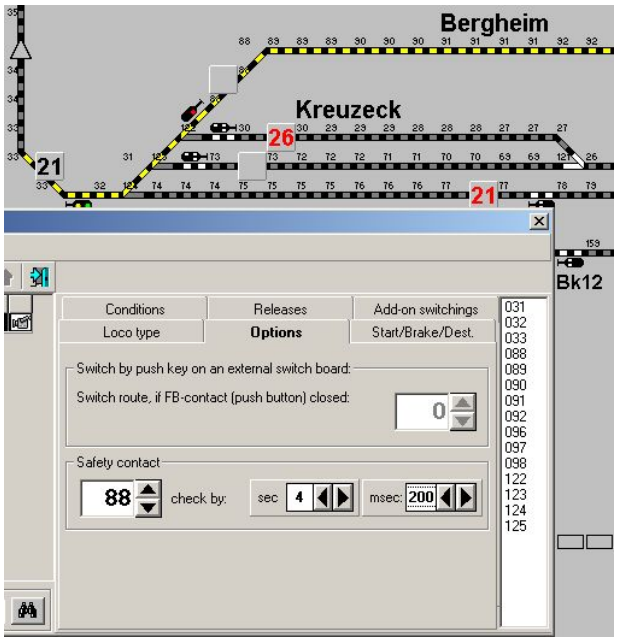
If – for example – only one solenoid device shall be switched, you have to register two routes with each “red” and “green” of this solenoid device and assign it to one contact each.

The interrogation will be done each 500 milliseconds – therefore you have to push the key for half a second. Switching conditions, partial release and add-on-switching will not be taken into consideration, nevertheless a route will be illuminated, if a release-condition is registered and faded out, as soon as this release condition is achieved. If no release condition is registered, the route will just be illuminated for a short time.

If you do **not** use an external switchboard, do **not** mark the corresponding selection box in the system settings.

Safety contact:

The safety contact is a complete new function to reduce the consequences of turnouts, that don't switch proper.



If a turnout of your route does not switch always to the correct position, proceed as follows:

Drive the route with your slowest locomotive and measure with a stop watch the time from the start until the train reaches the safety contact (in our example contact 88). On the index card you can now register the measured time plus a small tolerance.

If the train doesn't reach the contact (88) in the registered time after starting the route, because the turnout hasn't switched to the correct state or because another error occurred, **WIN-DIGIPET 9.0** will perform the action selected in the system settings on the index card „Program settings - Routes (see **4.10.4**).

You should try the route with several trains to get a proper time for the safety contact.

8.11 Route test

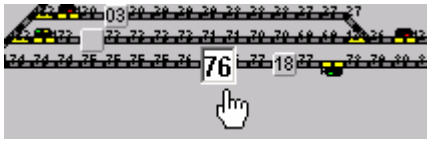
You can test your new routes immediately with **WIN-DIGIPET 9.0**.

You can test your route with...

- the **simulation** in **WIN-DIGIPET 9.0**.
- the route testing function together with the simulation.
- the route testing function directly with your model railroad layout.

Zoom for feedback contacts:

Under the menu <Options> <Display all feedback contacts> you can display all feedback contacts in the routes editor as well as in the main program.



You can check this switch to briefly check the recorded feedback contacts. All feedback contact numbers in the track diagram are displayed, but not the track occupied. This function is temporarily switched off. Once the switch has been unchecked, everything works as before, including the track occupied Sometimes the numbers are not readable. As soon as point to a number, left click the mouse. The number is enlarged.

The zoom doesn't work if have activated the <Display info about symbol below mouse pointer> in the menu <Options>.

Important!
If you use this function in combination with the simulation, there will be displayed no feedback information in the track symbols and also you can not activate or deactivate feedback contacts by clicking on them.

8.11.1 Route test with the simulation

You have just created your route and want to test the route.

For this **WIN-DIGIPET 9.0** supports a simulation mode. Close the route editor and drag a locomotive with pressed right mouse button on the start train number symbol of the route to be tested.

Now select the menu command <Options> <Simulation On> or click on the symbol in the toolbar.

A little window labelled „Simulation ON" appears. If you open this window for the first time also the number 500 will be displayed. This number indicates the time between two simulated events in the simulation, because of this a lower number results in a higher speed. You could use perhaps 2000 (msec). Then you have more time to see all events on the screen.

The simulation is set active after opening it, but it can be started and stopped with two buttons the little window.

WIN-DIGIPET 9.0 automatically set all feedback contacts of the train number display, that show a locomotive number, to the state “occupied”. By this usually the first switching condition of the route is fulfilled.

Now you use start-/destination function (see **18.5.1**) to start the route to be tested. After clicking **‘*Switch + Drive*’** the route will be highlighted in yellow and the train seem to move along the itinerary.

- The train number moves from the start to the destination contact as selected in the system settings.
- The feedback contacts will be occupied in same order as the switching conditions were registered in the route editor. If the itinerary will be highlighted in red/yellow not in the correct order then you should check your switching conditions.
- All add-on-switching will be executed.
- Also the partial releases will be executed.
- The speed of the locomotive can be seen in the locomotive controls, the locomotive quick command bar or as tendency in the locomotive monitor.
- When fulfilling the release condition the entire/rest of the route will be deleted from the screen.
- If you have recognized error in your route correct your settings in the route editor, drag the locomotive again on the start train number display, set with a mouse click the destination feedback contact to “Free” and the start feedback contact to “Occupied” and start the route again with the start-/demand-function.
- You can test further routes also in the way.

If you leave the simulation you can decide whether to restore the situation before the simulation in your track diagram or not.

Tip!
If you want to test a route with many feedback contacts or many add-on-switchings it is sometime useful to stop the simulation and to (de-)activate the feedback contacts manually with mouse clicks. When doing this, it will be easier to recognize single events.

Important notice!
If you use the simulation with a connected digital interface no locomotive command will be sent and no solenoid device will be switched. When leaving the simulation you should always answer with **'*Yes*'** to restore the real situation of your model railroad layout on the screen.

8.11.2 Route test

This function serves to check all switching. Mark the route to be tested on the routes list and click on <Options> followed by <Test run> or on the switch in the toolbar.

The window „Test route“ appears.

Place a locomotive at the starting contact of the route and click **'*Start*'**.

All switching conditions are checked and displayed in the list window.

If the route could be switched („executed“), **'Start'** changes to **'Report'**.

Let your locomotive travel to the destination contact of the route and click on **'Report'**.

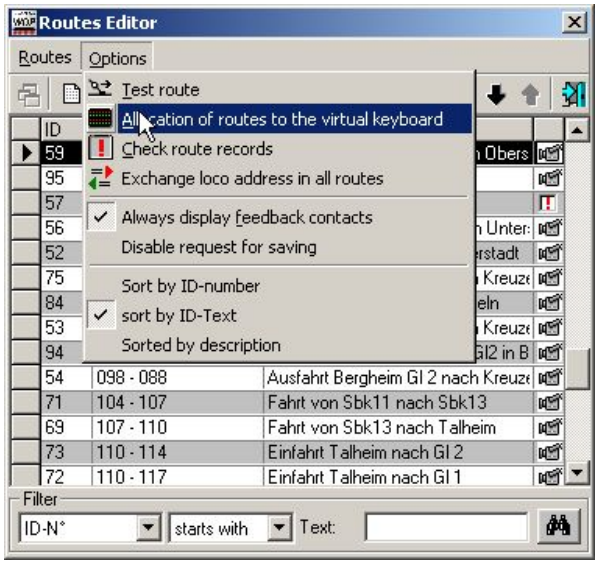
The displays in the window cover add-on signal switching and the destination (release) contact. As soon as the latter is reached, the route will be masked in the track diagram. In the report text /1means Occupied and /0 means Free.

8.11.3 Route test with test function and simulation

The route test function can also be performed with simulation with no interface connected. Contrary to the real simulation described under **8.11.1** you have to (de-)activate the feedback contacts manually with mouse clicks.

8.12 Allocation of routes to the virtual keyboard

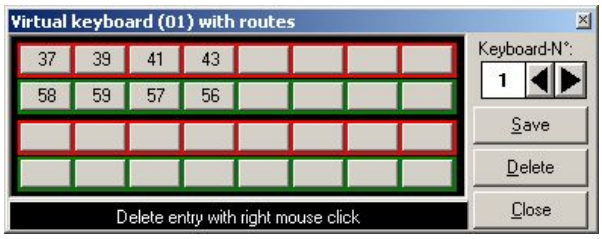
32 frequently used routes can be allocated in the main program to a **virtual keyboard.** The main program will execute them immediately by a mouse click (on assigned buttons) (see **18.5.2**).



The max. 32 routes can be allocated to the command buttons of the virtual keyboard, using the routes editor.

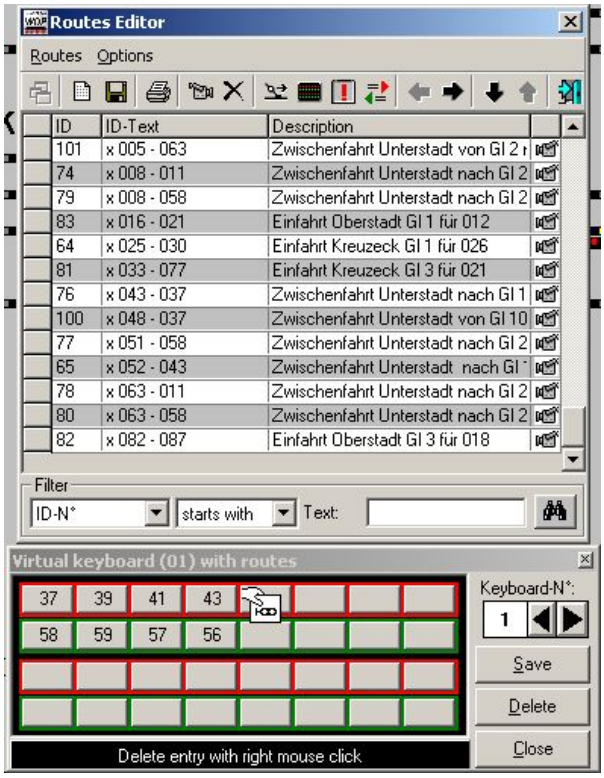
Click on <Options> in the menu bar and then on <Allocate routes to keyboard> or on the switch in the toolbar.

A window *'Allocate virtual keyboard with routes'* opens, containing 32 command buttons.



The **keyboard-no**. in the right hand display window is used in conjunction with the **Intellibox**; more detailed description below in this section. Should you not owe an Intellibox, select **„1"** as the keyboard number.

Mark the route in the routes list which should be assigned to a command button of the virtual keyboard. Click again on the line in the list and, with the left mouse button pressed, drag it to the command button. Release the mouse button. This is known as „drag and drop".



The command button shows the **ID** number of the route and a description is displayed in the bottom display line.

For further routes proceed as described above.

Having completed all the inputs on the virtual keyboard, click on **'Save'**: The recorded route is saved and available for switching in the main program.

Routes can be **individually** cancelled by clicking on the relevant command button with the right mouse button pressed.

The switch **'Delete'** deletes **all** recorded routes.

Moving the mouse pointer over an assigned button displays the description of the route in the bottom display line.

Additional information for Intellibox users:

A true closed loop between the layout and the computer takes place, using the Intellibox (in contrast to the Märklin–system). Details given in **4.4**.

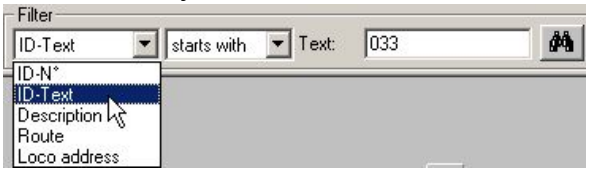
An existing “real” keyboard, plugged in on the left-hand side of the Intellibox, can be used to switch the first group of 16 routes.

To utilise this function, activate the „Keyboard no.“ and the correct keyboard address in system settings under „Hardware - Intellibox/Icum“. Check the switch „Switching position of solenoid devices using keyboard as input device" (see **4.4.1**).

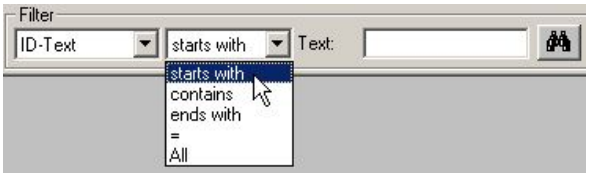
Important!
With the virtual keyboard you can drive no locomotives/trains on the layout or in the simulation. This function can only be used for switching routes, the trains have to be controlled manually.

8.13 Searching in routes list

Specific routes can be easily found within the routes list by the search functions at the bottom of the routes editor window.



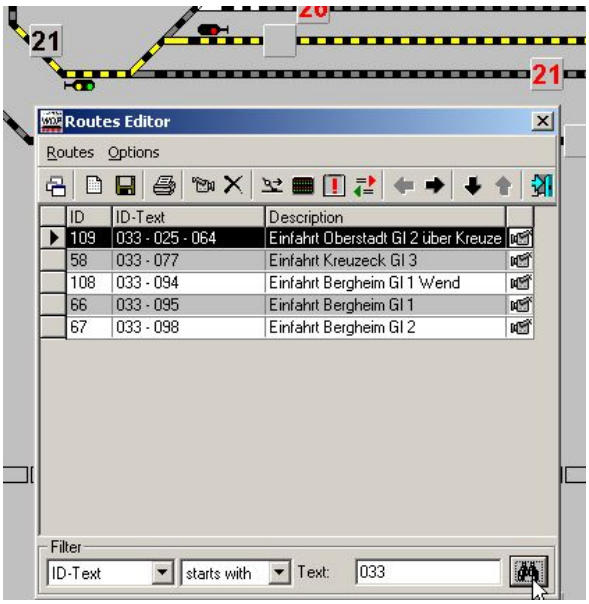
You can refine the "filter" in the left choice window by the criteria in the middle choice window.
In the right input field „ *Text:* “ you can enter the text to search.



Tip!
If you select the filter choice "ID No." and "=", you’ll get the error message „ No data found “. Use in this case another choice criterion.

After your choice and input you activate with a click on the symbol the filter function. All routes which fulfil one of the searching criteria appear in the list window.

The first route of the found choice is also illuminated yellow in the track diagram.



You can find routes in the list very fast by using the start-/destination-function. Click with right mouse button on the **start** train number display of the route to be searched and afterwards with the right mouse button on the **destination** train number display (similar to switching routes with the start-/destination function, see **18.5.1**).

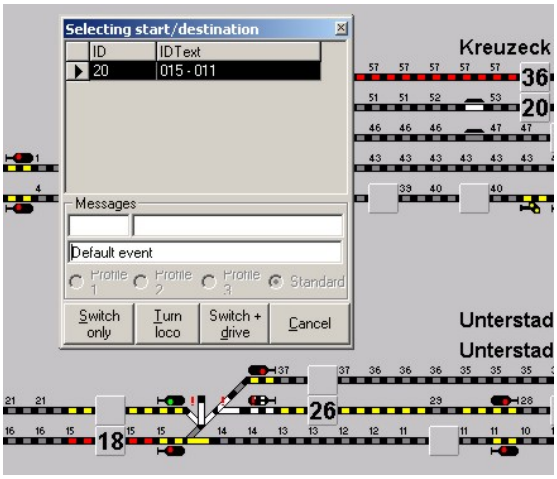
The route editor will show **all** routes with this start and destination contact.

You can restore the list with all routes with the menu command <Routes> <Display all> or with the symbol in the toolbar.

8.14 Check recorded routes

It is possible that a symbol may be faulty or the route is not switched correctly when the route is switched. This can happen if changes to the routes were made **later** in the track diagram editor and you forgotten to save those changes.

WIN-DIGIPET indicates this as well!



A **red exclamation mark** indicates in all program parts track symbols that are not identical with the recorded routes and the track diagram.

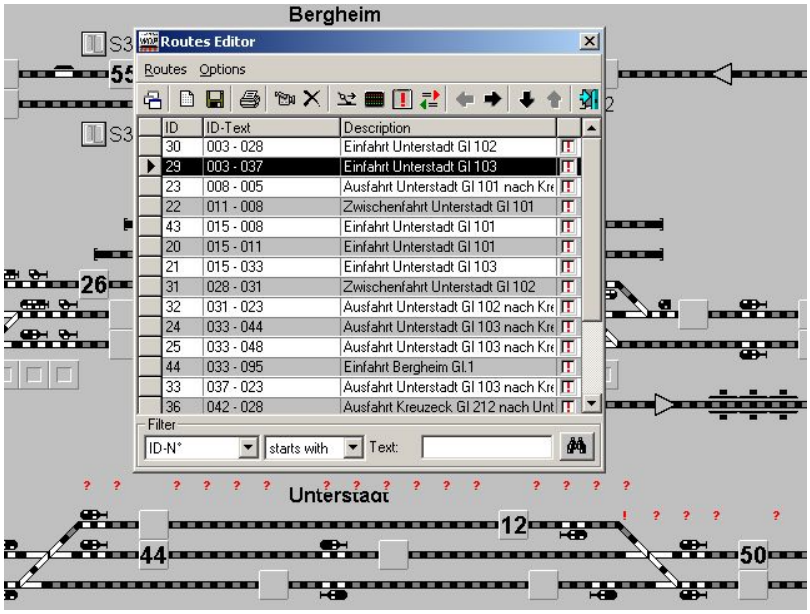
You know immediately that you have to make corrections in the routes editor and where the areas are. The corrected routes have to be saved.

In the picture the track diagram has been shifted one row down after recording of the route and the route hasn't been corrected yet.

Because of this the route 015 – 011 won't be displayed correct when using the start/demand-function. You can see this also in the picture: a wrong symbol as well as two exclamation marks are displayed.

To check **all** recorded routes automatically, click on <Options> and then <Check recorded routes> or on the switch in the toolbar.

Click on ***'Start'*** in the appearing window.



WIN-DIGIPET 9.0 checks all recorded routes whether they are **identical** to your track diagram. All routes, which need to be corrected, are listed in the routes list after the test. They are marked with a **red exclamation mark** to the **right** of the listing.

In the track diagram you will find at the original track symbol positions of the route red question and exclamation marks.

- The exclamation indicates always a wrong symbol.
- The question marks indicate symbol position where a symbol was recorded before changing the track diagram and where **no** symbol is displayed any more.

Perform all the necessary corrections with 'Record routes' on each route at the indicated places in the track diagram. After completion save the routes.

Remember!
If possible you shouldn't make any bigger changes of your track diagram after starting recording routes. This will save you a lot of time.

The message „No corrections necessary!" is displayed if there are no corrections to be made.

The complete routes list is reached by <Routes> – <Display all routes> or via the switch in the toolbar.

8.15 Print routes list

In the menu <Routes> use <Print> or click on the switch in the toolbar. The process is the same as in 5.16 – Print locomotive database - explained. The screen displays are self-explanatory.

8.16 Delete routes

In the index card <Routes> or on the index card <Search> mark the route to be deleted with a mouse click. Then click on <Routes> in the menu, followed by <Delete> or on the switch in the toolbar.

Important!
The first record can not be deleted but only overwritten.

8.17 Always display feedback contacts

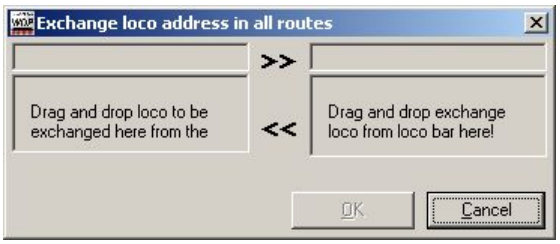
Click on the menu <Options> in the routes editor and check 'Display always feedback numbers' to display all the feedback contact numbers in the track diagram at **every** start of the routes editor. Always display FB numbers

Deactivate this check, if should not want this function.

8.18 Exchange loc address in all routes

IF you have registered locomotive addresses in many routes it would be much work to exchange locomotive addresses in all routes manually.

If you want to exchange a locomotive address if you want to redefine your "Home tracks" for example proceed as follows: Select the menu command <Option> < Exchange loc address in all routes > or in the toolbar of the route-editor on the symbol .



The window displayed at the right side will be displayed.

Drag the „old" and the new „new" locomotive to the field („drag & drop") and click afterwards on '***OK***'. Now the selected locomotives will be exchanged in all routes.

8.19 Disable request for saving

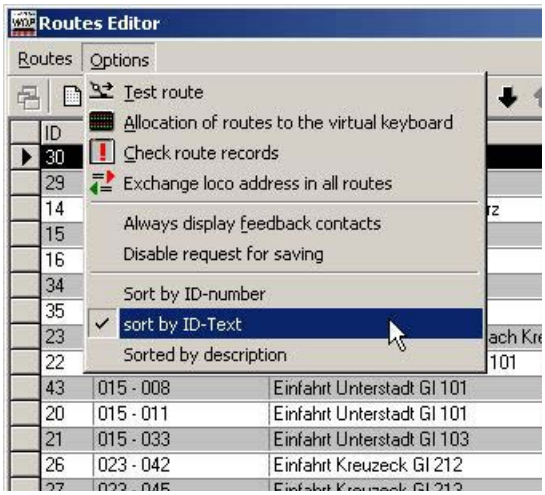
If you want to disable the permanent security request, if you want to save your data record, then you can disable this request by <Options> < Disable request for saving >.

Important notice!
This function is dangerous because one wrong mouse click can cause the lost of many data of the last changed and unsaved route.

8.20 Sorting functions in the route editor

If you want to sort your routes by criteria, select the menu command <Options> and the desired criteria. You can choose between three different criteria.

You can also change the sorting of the route list by clicking on the column headers of the list (ID, ID-Text or description). Every click on the column headers changes the direction of the sorting function (up/down).



8.21 Exit routes editor

Click in the menu <Routes> on <Exit> or on the switch in the toolbar: You are returned to the main program **WIN-DIGIPET 9.0**.

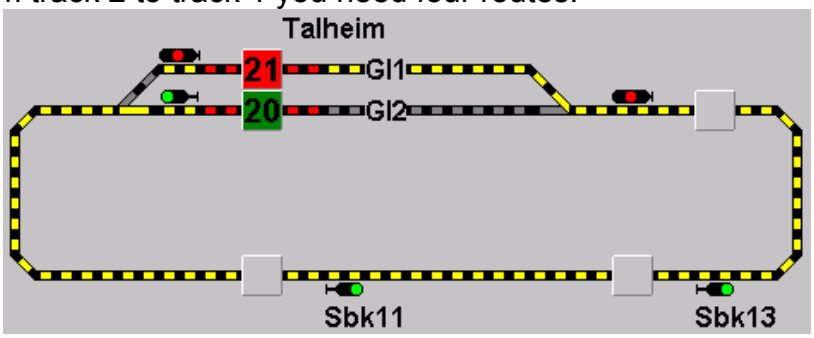
9 – TOUR-EDITOR

9.1 General

Tours in **WIN-DIGIPET 9.0** are similar to routes (see routes editor, chapter **8)**, but one tour can contain more than one route. Tours are also defined from **one** start- to **one** destination contact. In contrary to routes the destination contact can be the same as the start contact, if this are minimum of one block between the contacts. A train using a tour drives from block to block and stops only if the next block is “occupied” and valid alternative routes exist.

A small example:

On track 2 of Thalheim you see locomotive 20 and on track 1 locomotive 21, all other blocks are free. For a tour from track 2 to track 1 you need four routes.



- From track 2 to Sbk11
- From Sbk11 to Sbk13
- From Sbk13 to signal before Thalheim
- From signal before Thalheim to track 1

If you use this route via „Switch and drive“ (see **18.5.1**), you drive from one block to the next block and then the train stops. If you register these four routes to a tour, the train 20 starts from track 20 and drives threw the blocks mentioned above to track 1. But in the example above the train will stop a the signal before Thalheim, because track 1 is still occupied by locomotive 21 and will automatically continue driving when track 1 gets free.

In **WIN-DIGIPET 9.0** tours a registered in a table. Every tour stands for a train driving an itinerary from one start- to one destination contact using the routes, which were combined to a tour in the editor. A route can even use repeatedly a similar itinerary on your layout, but may **never** drive over the destination contact more than one time.

Of course also profiles (see chapter **10**), the matrix (see **8.9**) and special home track definitions (see later in this chapter) can be used in tours.

The tour editor is used to register tours in **WIN-DIGIPET 9.0**.

Before you want to use or edit tours the first time you activate them in the system settings (see section **4.15.1**), because otherwise the icon for the tour editor and the tour schedule editor are invisible in the menu and the toolbar.

The Tour-Editor / the tours offer the possibilities as follows:

- Combining existing routes to a tour.
- Defining only one itinerary for the tour from start- to destination contact
- or defining itineraries with alternative ways if some blocks are occupied.
- Driving the train several rounds across the layout before reaching the destination.

- Even directions changes are possible during a tour, if profiles with direction change commands exist for the used locomotives.
- Tour can be used by more than train one after the other or even at the same time.
- Of course the locomotive type selection from the routes editor will be taken into account, so you can still create individual using conditions for different locomotive types.
- Tours can be used in automatic with demand contacts and the tour automatic.

9.1.1 Tour processing

The process flow of the tour in the last section is show in the following table.

Tour event flow in WIN-DIGIPET 9.0					
Route	Check contact for next route	FB-contact	Speed of train when stopping in %	Speed of train when driving in %	Comment
114 - 104		114	40	40	**Start** of the tour
		102	30	30	Reduce speed because of track contact
	103	103	20	**50**	Brake contact/check contact/continue if next route is free, otherwise brake
		104	0	50	Dest. of 1st route, if 2nd route free, continue, otherwise stop
104 - 107		104	50	50	Start of 2nd route, if stopped before, otherwise continue with assigned speed
		105	30	30	Reduce speed because of track contact
	106	106	20	**40**	Brake contact/check contact/continue if next route is free, otherwise brake
		107	0	40	Dest. of 2nd route, if 3rd route free, continue, otherwise stop
107 - 110		107	40	40	Start of 3rd route, if stopped before, otherwise continue with assigned speed
		108	30	30	Reduce speed because of track contact
	109	109	20	**35**	Brake contact/check contact/continue if next route is free, otherwise brake
		110	0	35	Dest. of 3rd route, if 4th route free, continue, otherwise stop
110 - 117		110	35	35	Start of 4th route, if stopped before, otherwise continue with assigned speed
		115	30	35	Reduce speed because of track contact
	116	116	20	20	Brake contact/check contact/brake
		117	0	0	**End** of tour

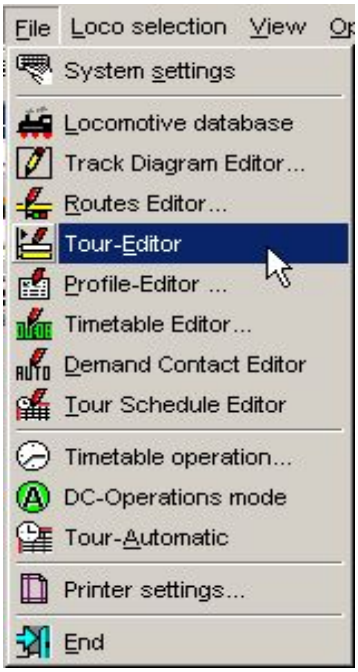
In the first 4 columns your see the route's data. The fifth column shows the speed of the train if the next route can be switched and the train has not to be stopped. Every time an adjacent route can be switched when reaching the check contact, the speed settings of the actual route are ignored and the speed settings are used from the adjacent route. The **bold** speeds in the table are taken from the next route.

If the adjacent route can not be switched when reaching the check contact, the speed of the train is controlled by the actual route. Even if the train has already reached the stop contact the train will be accelerated again if the adjacent route gets free and does not stop.

The recommend check contact is the break contact, but you can use every contact of the route.

9.2 Registering tours

The tour editor can be opened by <File> <Tour-Editor> or by clicking on the symbol in the toolbar.



When opening the tour editor for the first time you will see an example entry, which can be overwritten by your first tour.

Before registering your first tours you should consider the following:

- where to start with the tour,
- where to end with the tour,
- which locomotive types should use the tour,
- which itineraries should be used by the tour,
- do you want more than one train to use this tour,
- which alternative itineraries can be included in this tour,
- do you want to use home-tracks similar to the routes?

In the field „*T-Text*“ you can enter a text with up to 30 characters.

The “Description” may have up to 100 characters.

If you want to use the tour with more than one train at the same time, then you have to check *“Multiple”.* This is very useful when using longer tours to avoid traffic jams or the need to register additional tours. You should remember when using this option to give the train possibilities to continue at the end of the tour, because otherwise a traffic jam for the following trains would be the result.

The routes are registered in columns (vertical) and rows (horizontal). **WIN-DIGIPET 9.0** processes the registered routes from the top left to the right bottom. The vertical arrangement (top to bottom) of the routes describes the way from start to destination. The horizontal arrangement describes the possible alternative ways. The examples later on will describe this in detail.

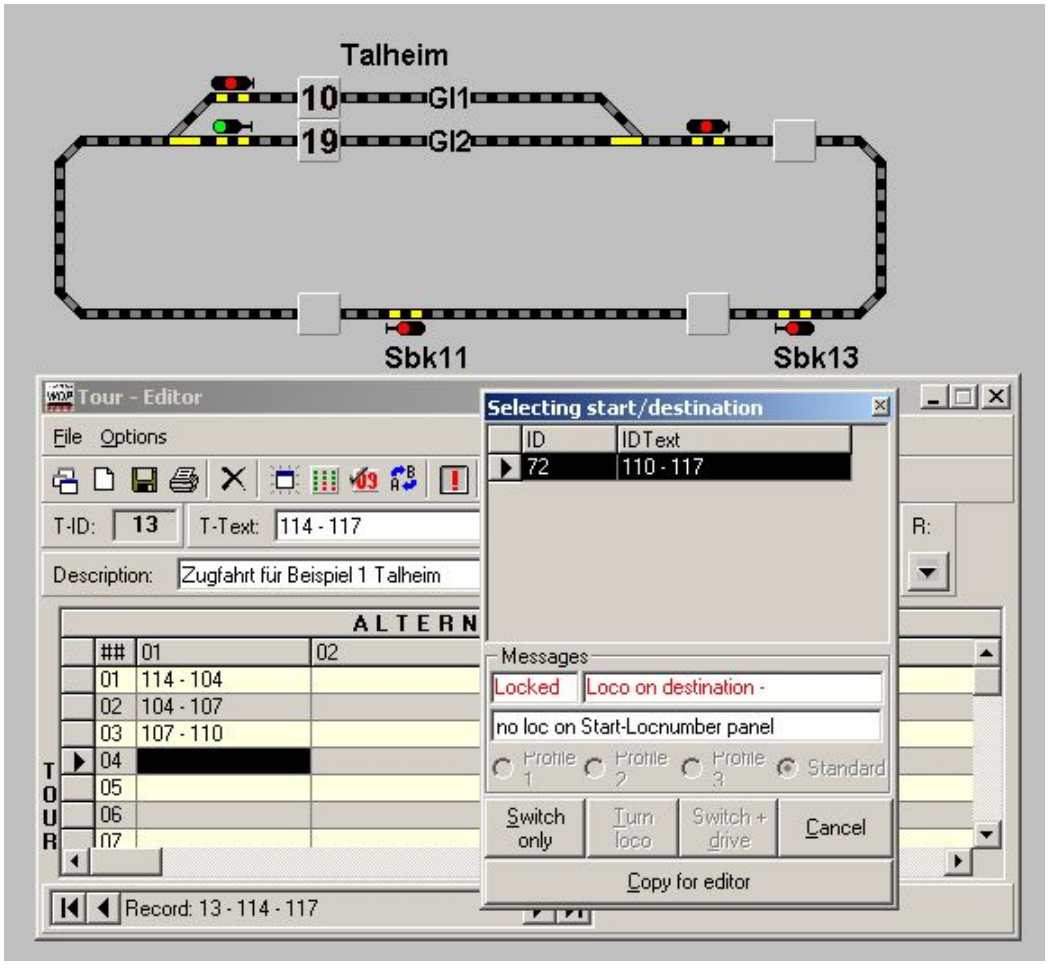
You have two possibilities for the registration of routes, the first is much more elegant and faster.

First click on the cell, where you want to register a route and register the route with one the following possibilities:

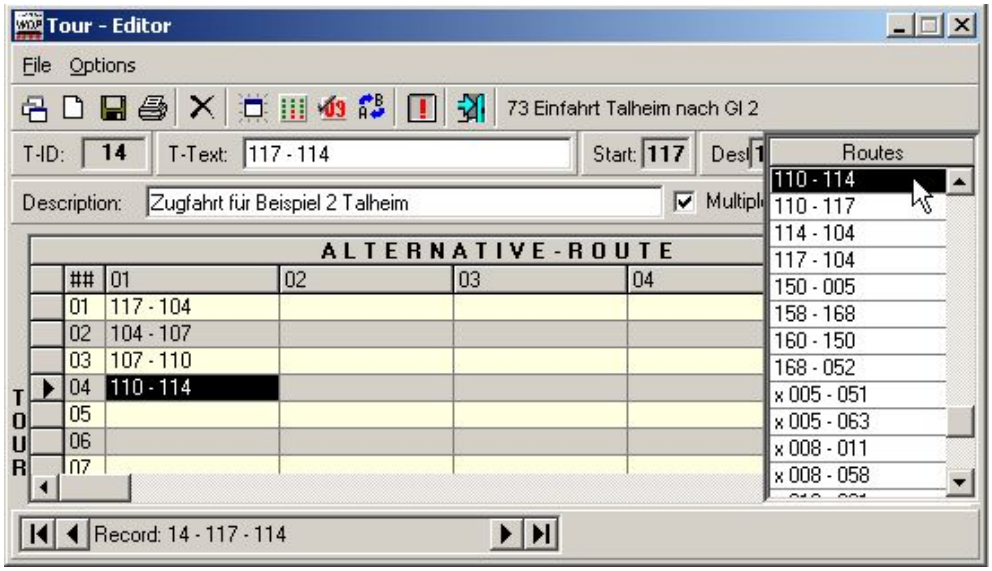
1. Click with the right mouse button first on the train display of the start contact and afterwards on the one of the destination contact.

   Then the "Select Start/Destination" window opens and in this window click on '***Copy for editor***', this will register the selected route in this cell of the table and the cursor will move to the next row.

   Information!
   Eventual error messages in the "Select Start/Destination" window can be ignored, because these are only relevant when routes shall be switched by this window.



2. The second possibility is to open the context menu by clicking with the right mouse button on the cell to edit. In the context menu select <Routes list> or click on the arrow next to “R:” in the toolbar. This will open a list with all registered routes.



Select the desired route from the list and the route will be highlighted yellow, if it is not covered by the editor.

When moving the mouse over the routes ID-texts in the list the description of the route will be shown as tool tip (see picture on the right side).

With a double click the selected route will registered in the selected cell of the table and the cursor will move to the next row.

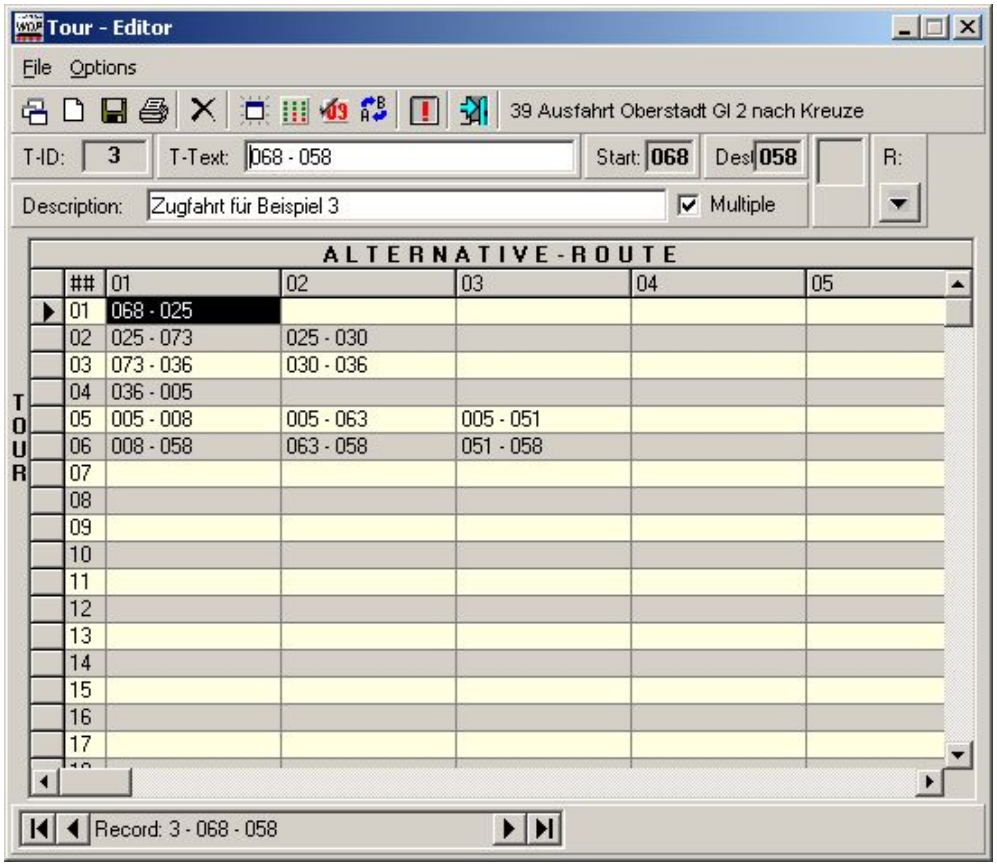
9.2.1 Registering further routes and alternative itineraries

Further routes for this tour can be added by the same procedure.

If you don’t want to register alternative itineraries for this tour, all routes for this tour will be registered on after the other in the first column of the table.

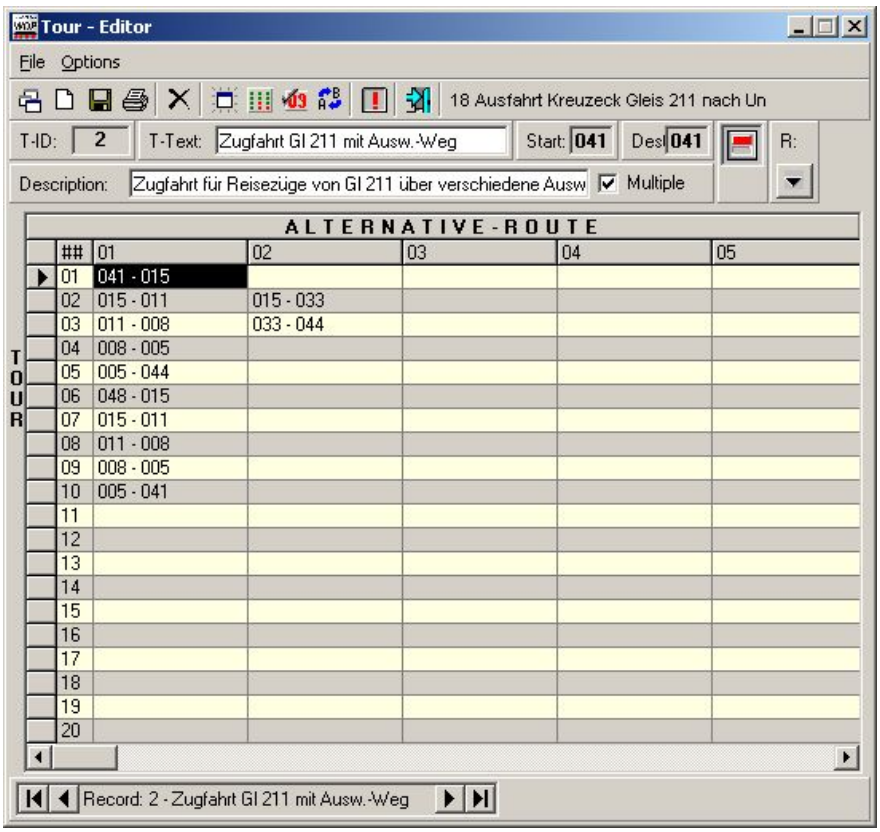
IF you want to register alternative itineraries, these can be registered in the other columns side by side.

A simple example is shown in the picture on the right side. Here columns 02 and 03 contain the alternative itineraries.



TIP!
If you register alternative itineraries, you have to assure, that the train never will come to a dead end. But you don't have to register additional routes to continue with a route in the first column, because if **WIN-DIGIPET 9.0** doesn't find a suitable route in the current row, it will continue searching the next row.

A simple example showing a tour with no suitable routes in one row, shows the following picture.



In column 02, row 03 the route 033 – 044 has been registered.

WIN-DIGIPET 9.0 will try to search for the next route in row 04, but won't find a route with a suitable start contact, so it will jump to row 05 and then to row 06, where it will continue with route 044 - 015.

In this example row 05 column 02 has a special function.

If the tour uses this route the tour will stop when releasing this route, because the destination contact 041 has been reached ahead of schedule.

This special function will be explained in section **9.2.4**.

9.2.2 Editing tools

If you want to edit, register or delete data you can use the context menu, which you can open by clicking with the right mouse button on the cell to edit.

The menu commands are self-explanatory.

Tip!
If you have opened the tour and the routes editor simultaneously then you can select with a double-click on a route in the tour editor this route for the route editor.

9.2.3 Copy complete tour into a new dataset

If you want to create tour which is very similar to an existing one, then you can copy the existing tour into a new dataset and then adapt the copied tour to the needs of the changed tour parts (e.g. other alternative itineraries).

Navigate to the existing tour in the tour editor and open the context menu with the right mouse button and select <Copy complete data into new dataset>.

The copied tour will be added at the end of the tour list. The copied tour can identified by the prefix „(C).." in the tour's description.

Now you can adapt the tour to the changed needs as shown in the former examples.

9.2.4 Display route matrix

When registering tours, you have to assure, that the train never will come to a dead end.

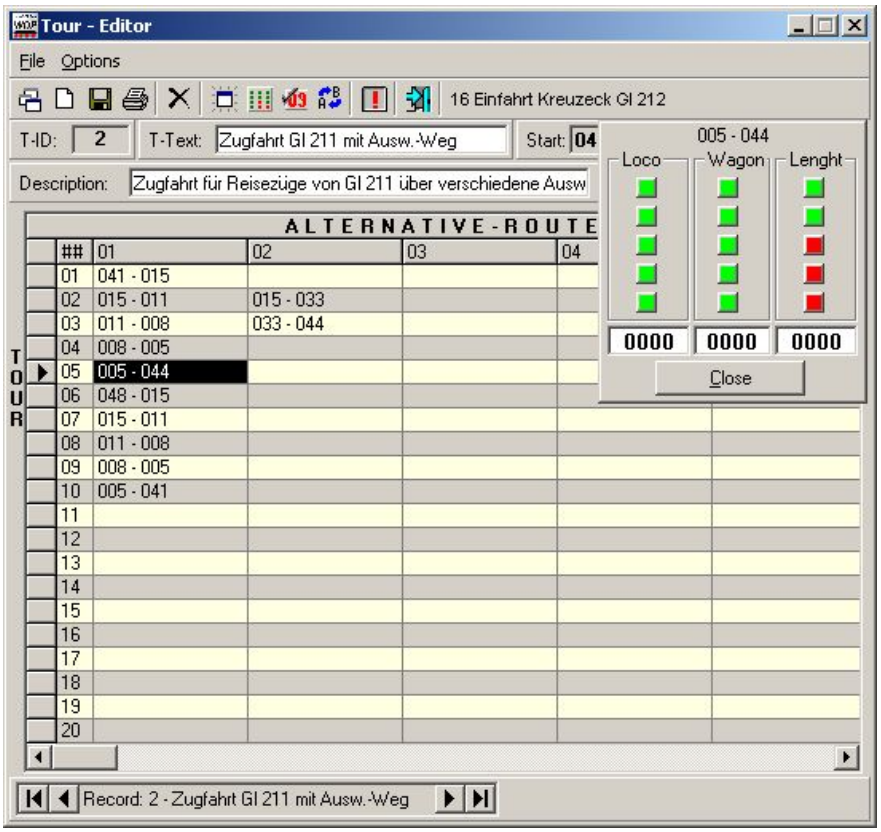
Because of this you should perform a matrix-test with your tour. You can perform the matrix test in three different ways:

- Select the menu command <Options> <Route matrix>,
- <Route matrix> from the context menu, that you can open with the right mouse button
- or click on the symbol in the toolbar of the tour editor.
- Move the mouse cursor over the heading of the **first** column "01", then the cursor will change to a down-arrow, with a mouse click you can also activate now the matrix-test.

If you check the matrix for the first column the program tests all rows and shows the complete matrix for the main itinerary. For the alternative routes/itineraries you have to check the single route-entries one after the other by clicking on this entry.

Remember always not to "build" a dead-end, because of limitations of route's matrix.

The picture shows the matrix-test for row 05 of the first column, if you want also longer trains to use this way, then you have to change something.



Because of this column 02 of row 05 contains the route 005 – 041.

This entry stops the tour ahead of schedule, but would be the only possibility to use this tour with a train with the length “middle” or “short”.

All other (shorter) trains would drive the main itinerary from column 01.

Important!
You should always perform a matrix-test to protect the tour against dead-end situations.

9.2.5 Registering a new tour

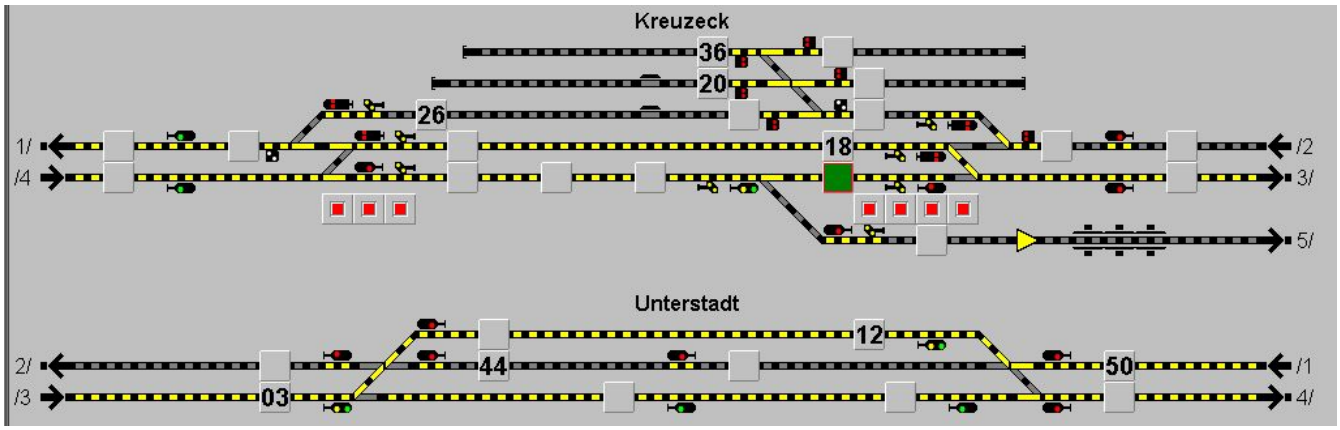
New tours can be added via <File> <New> or by the symbol in the toolbar of the tour editor.

The new tour is registered as described above.

9.3 Show entire tour

WIN-DIGIPET 9.0 can show you the entire tour in the track diagram. This is very useful to check the main itinerary and the alternative itineraries of the tour.

An example is shown in this picture:



In this example the start contact is the same as the destination contact. Because of this the train number this display of this contact is coloured green with a red border. If the start and destination contact are different the colour of the start contact would be green and the colour of the destination contact red. The routes are highlighted in yellow as usual.

You can activate this indication of the entire tour via...

- the menu <Options> <Show entire tour>,
- via the context menu, that can be opened with the right mouse button, and then <Show entire tour>,
- or via the symbol in the toolbar of the tour editor.

9.4 Check tours

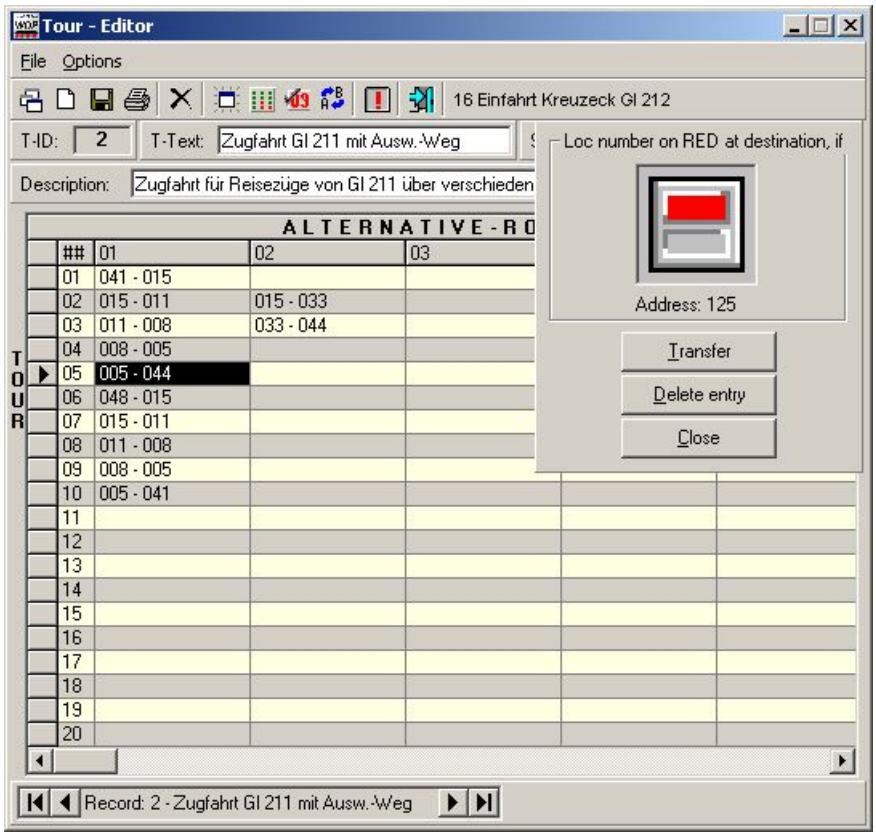
You can check your tours at any time, if the registered data are consistent with the data from the other editors. This is every important, if have you have changed or deleted routes and you are not sure if you had used them in tours. During the test the program checks if the routes used in your tours have been changed / still exist.

The check window be found via <Options> <Check tours> or by the symbol in the toolbar.

After pressing ***'Start'*** the results of the check will be displayed and can also be printed.

In this example the route 048 – 015 has been renamed. You should check this route and correct the data if possible.

9.5 „Home track"-function for tours



The „home track"-function gives you the possibility to switch the locomotive's number to red at the end of a tour if a specified solenoid device is set to the registered state (e.g. "red). Trains with red locomotive's numbers will be ignored for the further operation in the automatic with demand contacts or the tour automatic. This is for example very useful to bring the trains to a desired position ("home track") on your model railroad layout at the end of operations.

For this example you should create a virtual switch (k84 symbol) in your track diagram. You should give this switch also an address because otherwise you won't be able to switch it manually.

Then you have to register this switch in the tour editor for your tour. You can open the field for registration of this symbol by <Options> <Loc number on RED at destination> or by the symbol in the toolbar.

Drag the switch symbol to the picture box in the frame “Loc number on RED at destination, if”.

You can switch the symbol with repeated clicks on this field to the desired condition state. Afterwards click on **‘*Transfer*’.**

The symbol will be shown in the tour editor.

A registered symbol can be deleted with the button **‘*Delete entry*’** in the same frame.

9.6 Standard window size

When working with the tour editor you change the window size according to your needs.

If you want to change the window size, move the mouse cursor to one edge of the window, the mouse cursor will change to an double arrow and with pressed left mouse button you can change the window size (typical for Windows).

To reset the window size to standard size, select in the menu <Options> <Default size> or click on the symbol in the toolbar.

You can also change the width the columns similar by moving the mouse cursor over the separator of two columns.

9.7 Printing tours

For printing select the menu command <Options> <Print> or click on the symbol in the toolbar.

You can choose between the options „*All*“ and „*Headlines*“ to decide what to print.

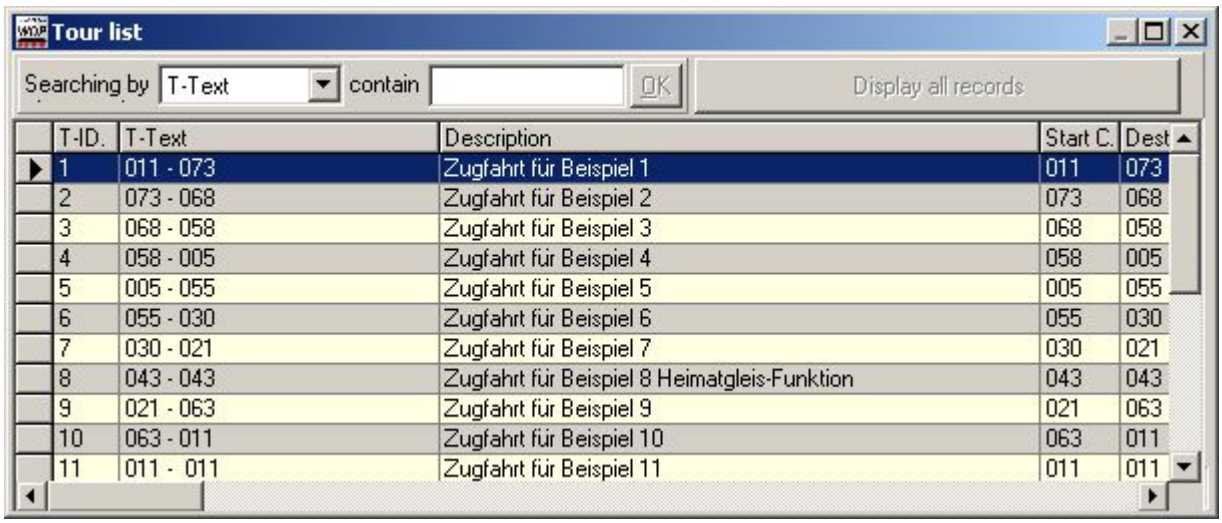
All other options are self-explanatory.

You can also export this printout into the file „Zugfahrten.rtf“ on your hard disk.

9.8 Tours list

You can display a list with all your tours.

You can open this list via the menu command <File> <Tours list> or by the symbol in the toolbar.

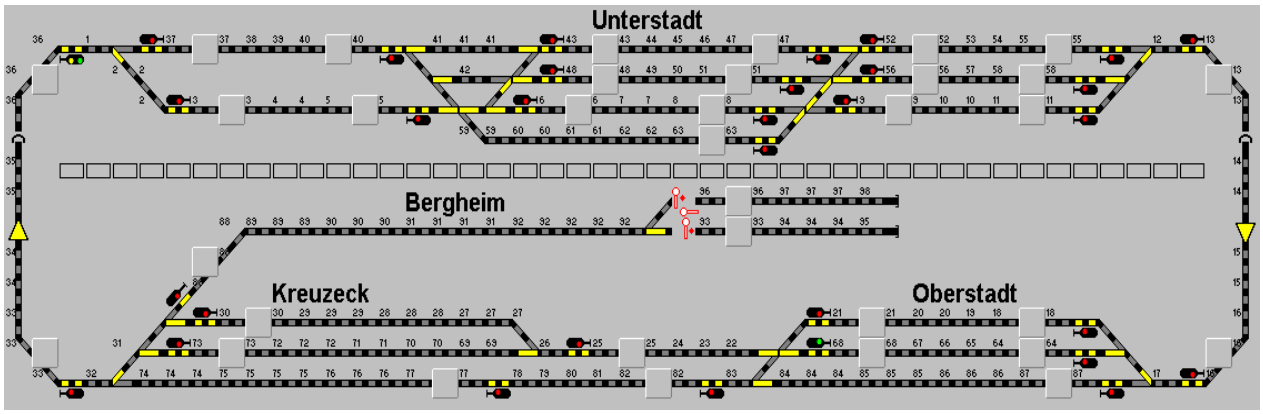


T-ID.	T-Text	Description	Start C.	Dest
1	011 - 073	Zugfahrt für Beispiel 1	011	073
2	073 - 068	Zugfahrt für Beispiel 2	073	068
3	068 - 058	Zugfahrt für Beispiel 3	068	058
4	058 - 005	Zugfahrt für Beispiel 4	058	005
5	005 - 055	Zugfahrt für Beispiel 5	005	055
6	055 - 030	Zugfahrt für Beispiel 6	055	030
7	030 - 021	Zugfahrt für Beispiel 7	030	021
8	043 - 043	Zugfahrt für Beispiel 8 Heimatgleis-Funktion	043	043
9	021 - 063	Zugfahrt für Beispiel 9	021	063
10	063 - 011	Zugfahrt für Beispiel 10	063	011
11	011 - 011	Zugfahrt für Beispiel 11	011	011

You can filter the data records in the tours list using the fields „*Searching by*“ and „*contains:*“ and restore the original view with ‘***Display all records***’. If you select a tour in this list, this tour will be displayed automatically in the tour editor.

9.9 Examples of tours

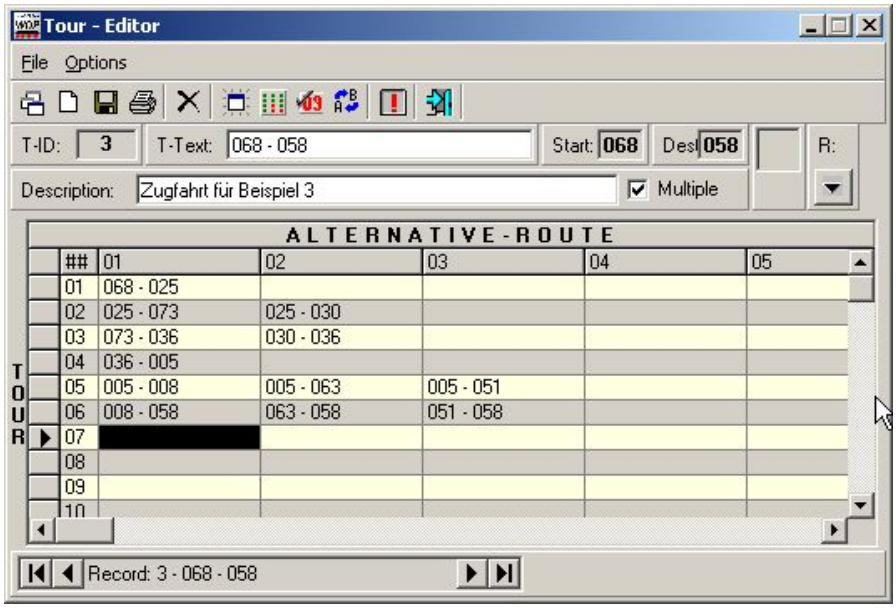
On the next pages you will find examples of different tours.



The track diagram above will be used for all examples. For some pictures this manual uses montages, so that you can see the feedback contact numbers and the green start- and red destination-contact-train-number-displays at the same time.

When registering tours, you have to assure, that the train never will come to a dead end. In the case of a dead-end-situation the tour will wait for its timeout (see also system settings, section **4.15.3**) and then automatically be set to the state “red sandglass” in the tour event inspector after an optical and acoustical signal. This will

also occur if the train using the tour will be blocked longer than the timeout time by a train in the block system before.



The tours in the tour are checked row by row if a route can be switched. If the route in column 01 can be switched then the tour will be continued in the next row.

If the route in column 01 can not be switched (e.g. because of locomotive type or train length) then the program will continue with the route in the second column and so on.

In this way you can configure up to 15 alternative itineraries (horizontal) and the tour can have a length of up to 20 block systems / routes (vertical).

OF course the length of routes in the tour is irrelevant and you can even make longer tours when using the follow-up tours and routes in the tour automatic.

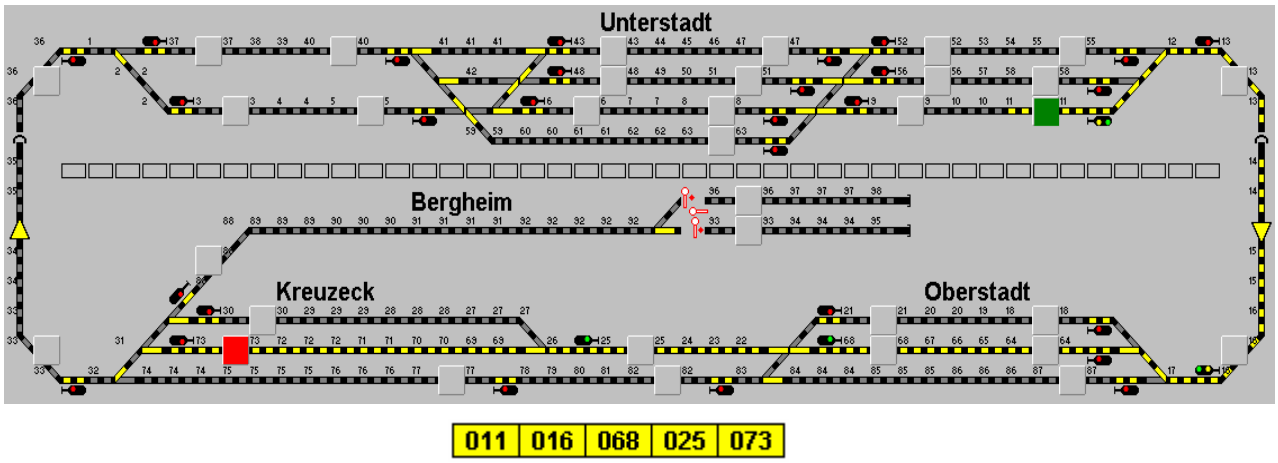
If a row has no further columns with switch able routes, then the program will continue searching in the first column of the next row. If this row contains also no switch able route, then the program will continue searching in the next row and so on. In terms of control **WIN-DIGIPET 9.0** searches for a route with a start contact that is the same as the destination contact of the last/actual route.

The order of processing of tours is always from the top left to the right bottom. You should always remember this when registering tours, because this has a great influence on the way the tour is processed and sets priorities, which routes to check first.

When creating routes, you should consider the following points:

- You always register the **preferred** routes in the first column 01, because this column will also be checked first. If the route in the first column can be switched, the route will be started and the other columns of this row ignored and the program will continue at the next check contact with the next row.
- Routes for short trains should also be registered in column 01 to reserve the longer routes also for the longer trains.
- When using the “home-track”-function take care of the instructions in sections **9.5** and **9.7.8**. If you just want only one special locomotive to be switched to red then you have to use a route at the end of the tour which is only allowed for one locomotive, see **8.21.6**. Otherwise every locomotive will be switched to red at the end of the tour if the condition given by the switch is fulfilled.

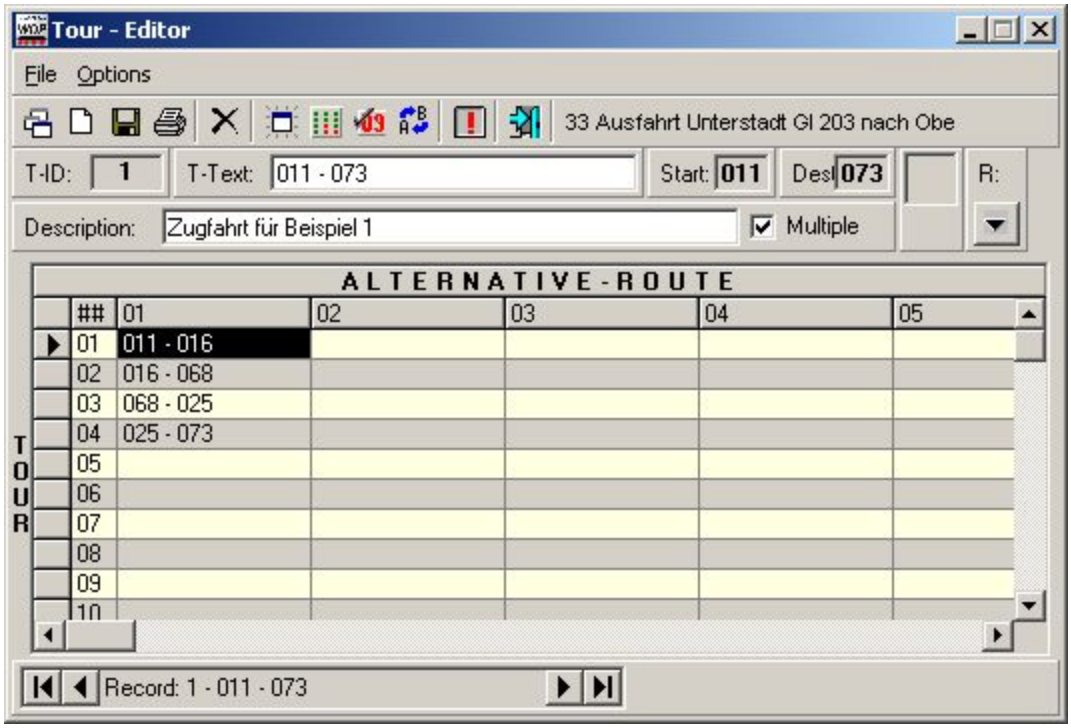
9.9.1 Simple tour from start- to destination-contact



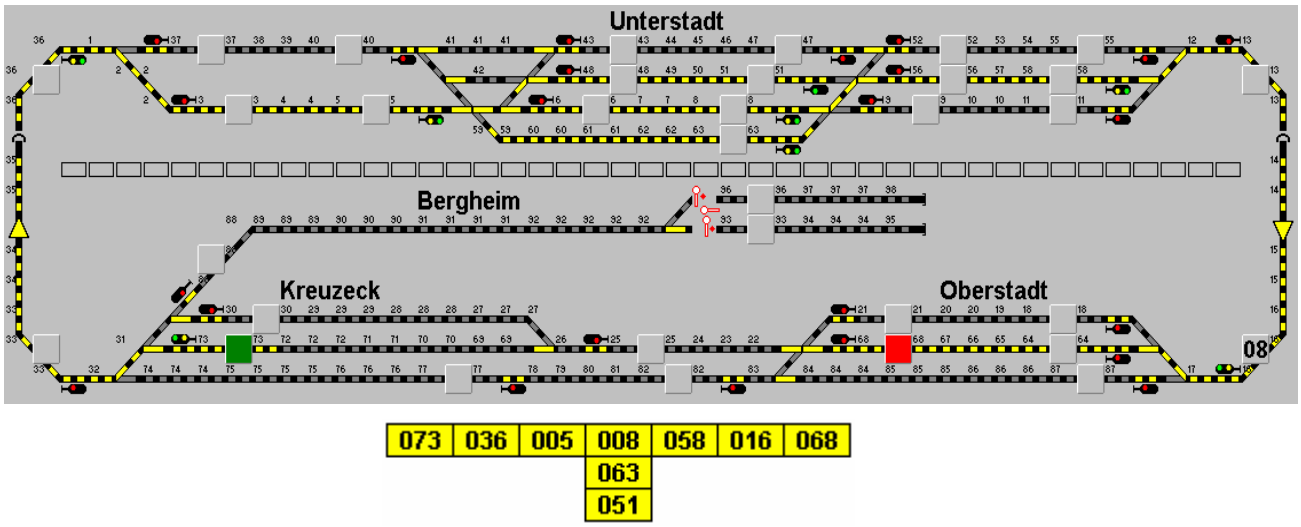
This example is very simple and the registration of this tour does not demand great skill.

The routes just follow one after the other.

The ID-Texts of the routes contain the start- and destination contacts of the routes. This will make it much easier to understand this tour.



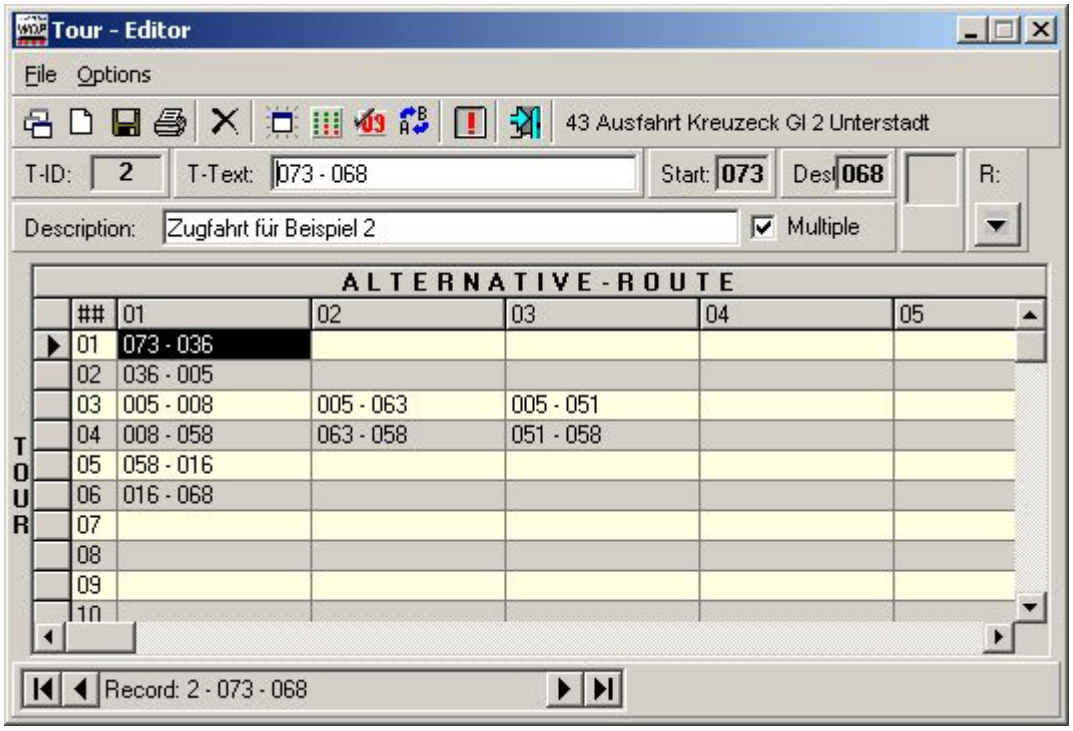
9.9.2 Simple tour with 2 alternative itineraries



This is an example with two alternative routes in Unterstadt.

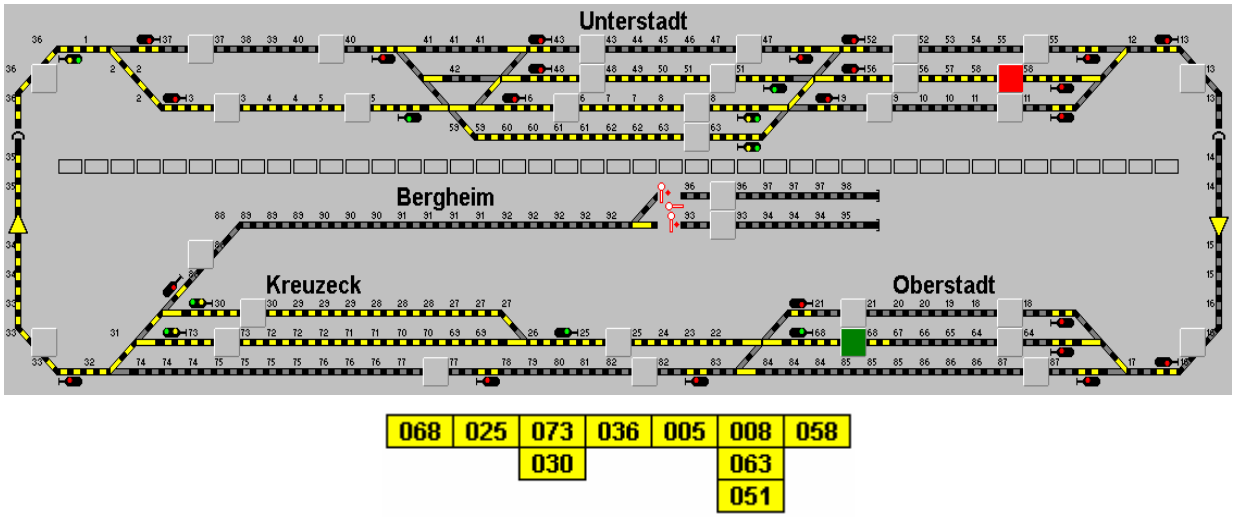
The alternative itineraries are registered in columns 02 and 03 and start in row 03.

In row 04 the itineraries have all the same destination contact and the tour can continue normally in row 05.



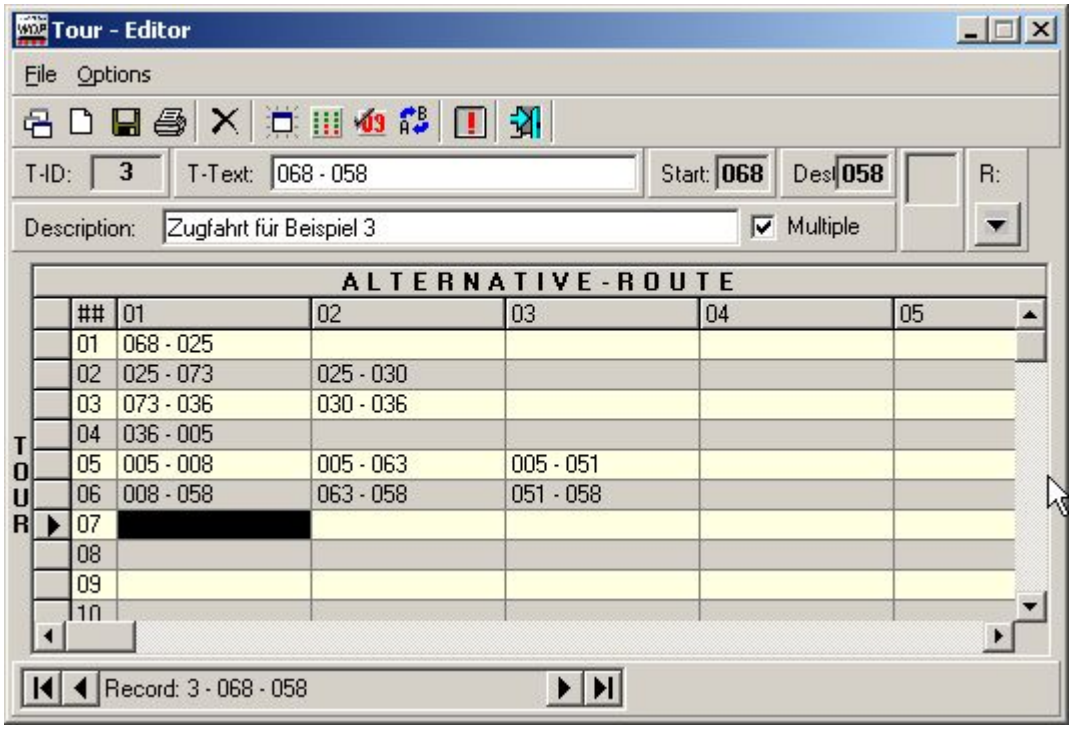
##	01	02	03	04	05
01	073 - 036				
02	036 - 005				
03	005 - 008	005 - 063	005 - 051		
04	008 - 058	063 - 058	051 - 058		
05	058 - 016				
06	016 - 068				
07					
08					
09					
10					

9.9.3 Simple tour with several alternative itineraries

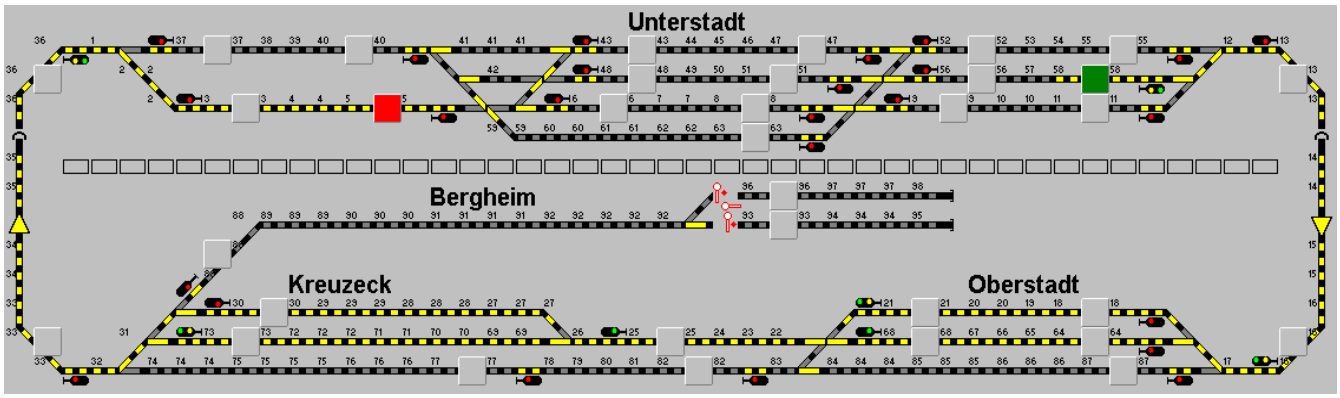


This example offers alternative itineraries in Kreuzeck and Unterstadt.

The alternative itineraries are again registered in columns 02 and 03. They are reconnected in rows 03 and 06.

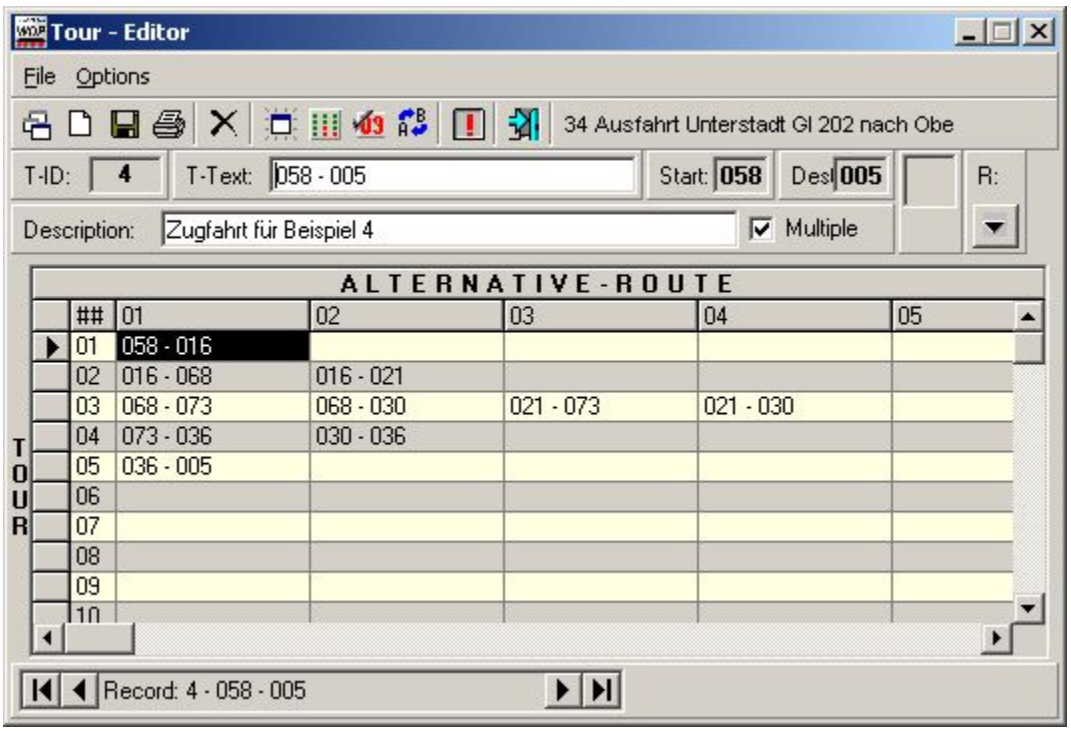


9.9.4 Simple tour with 2 (crossed) alternative itineraries



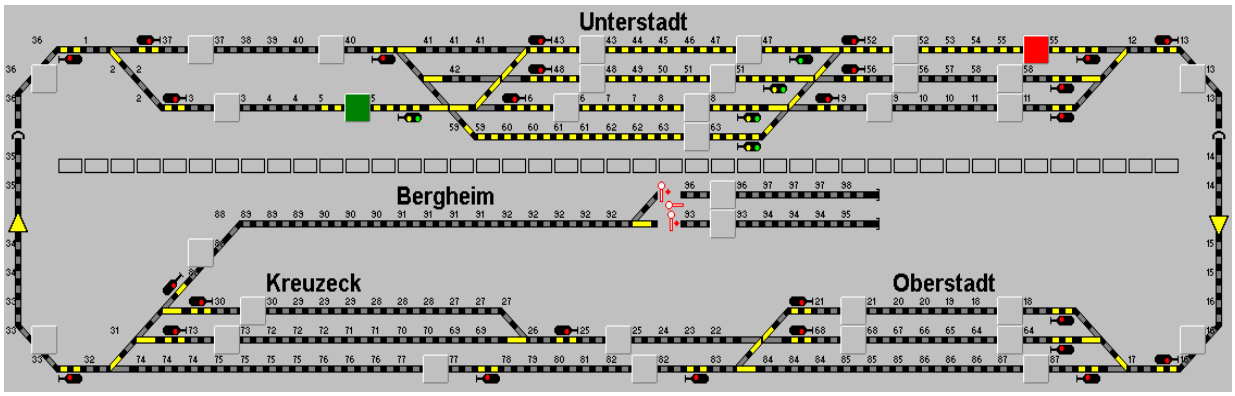
058	016	068	073	036	005
		021	030		

In this example the tour uses both platforms in Oberstadt and Kreuzeck. The routes from Oberstadt to Kreuzeck end at the platforms. Possible routes from Oberstadt to Kreuzeck are 068 – 073, 068 – 030, 021 – 073 and 021 - 030. Because of this four routes have to be registered in row 03.



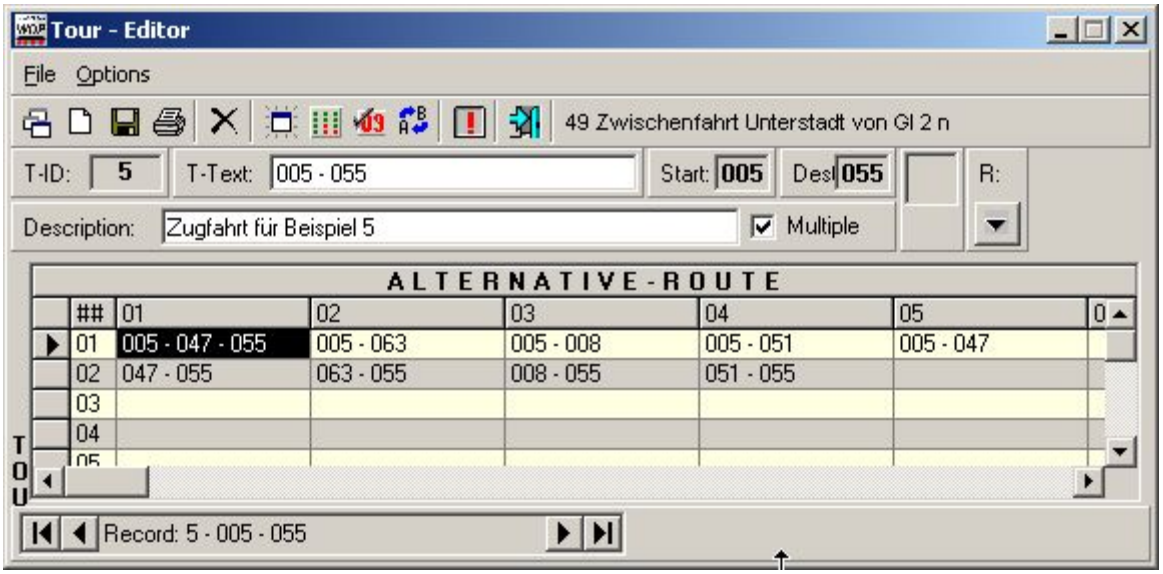
##	01	02	03	04	05
01	058 - 016				
02	016 - 068	016 - 021			
03	068 - 073	068 - 030	021 - 073	021 - 030	
04	073 - 036	030 - 036			
05	036 - 005				
06					
07					
08					
09					
10					

9.9.5 Simple tour with 4 alternative itineraries of different length

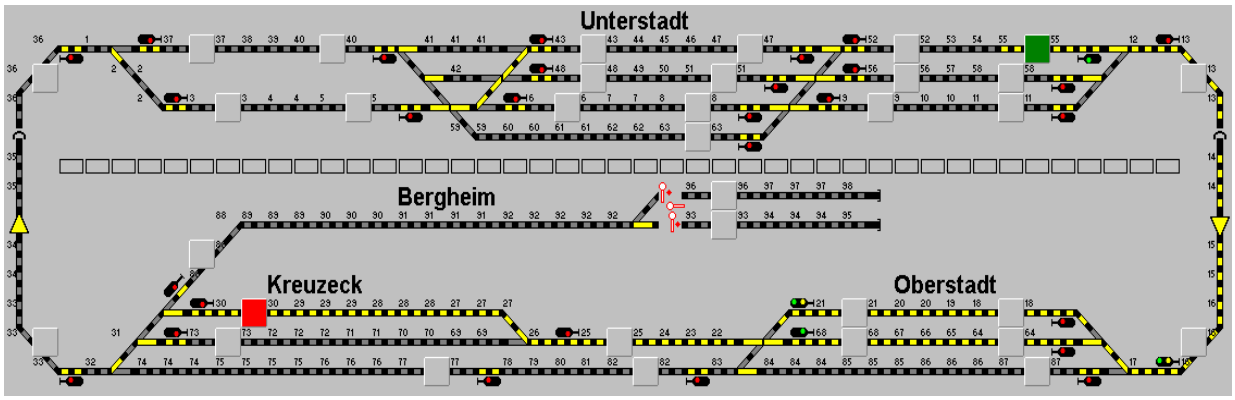


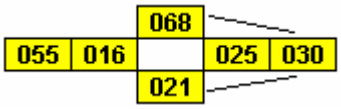
005	——	055
	047	
	008	
	051	
	063	

The special feature of this tour is the difference in the length of the uses routes. The route 005 – 055 in row 01 leads directly to the destination contact, while the other routes lead from signal to signal. The follow-up route to the route in column05 of row 01 is registered in column 01 of the row 02, because empty columns are not allowed before or between entries in a row.



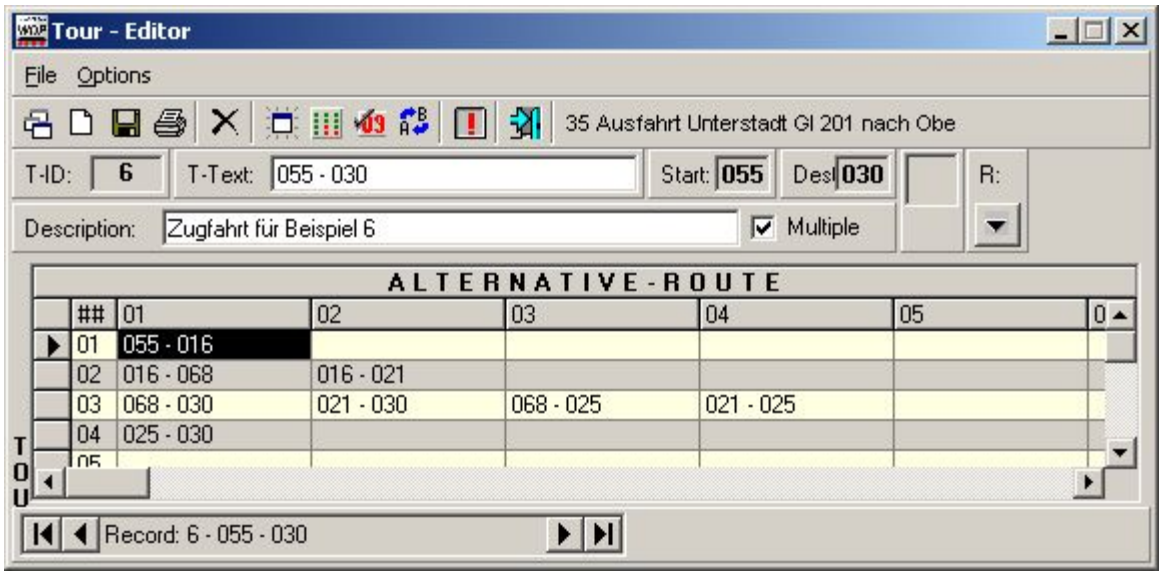
9.9.6 Tour with 2 alternative itineraries of different length



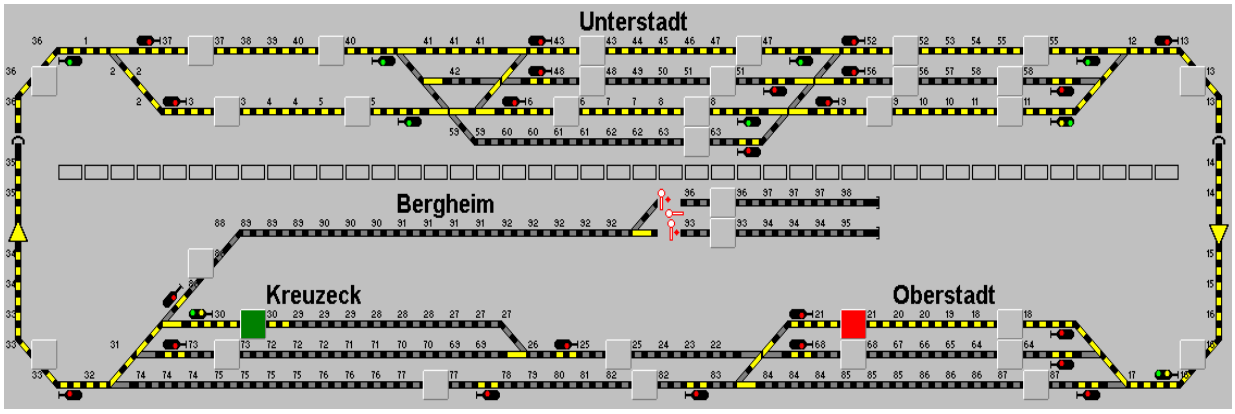


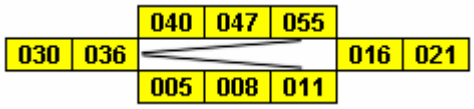
From Oberstadt to Kreuzeck the train can uses shorter and longer routes. The longer routes have been registered in columns 01 and 02 of row 03, because they should be tried first.

Row 04 is important, because this row is responsible for bringing the train to the destination, if the shorter routes were used.



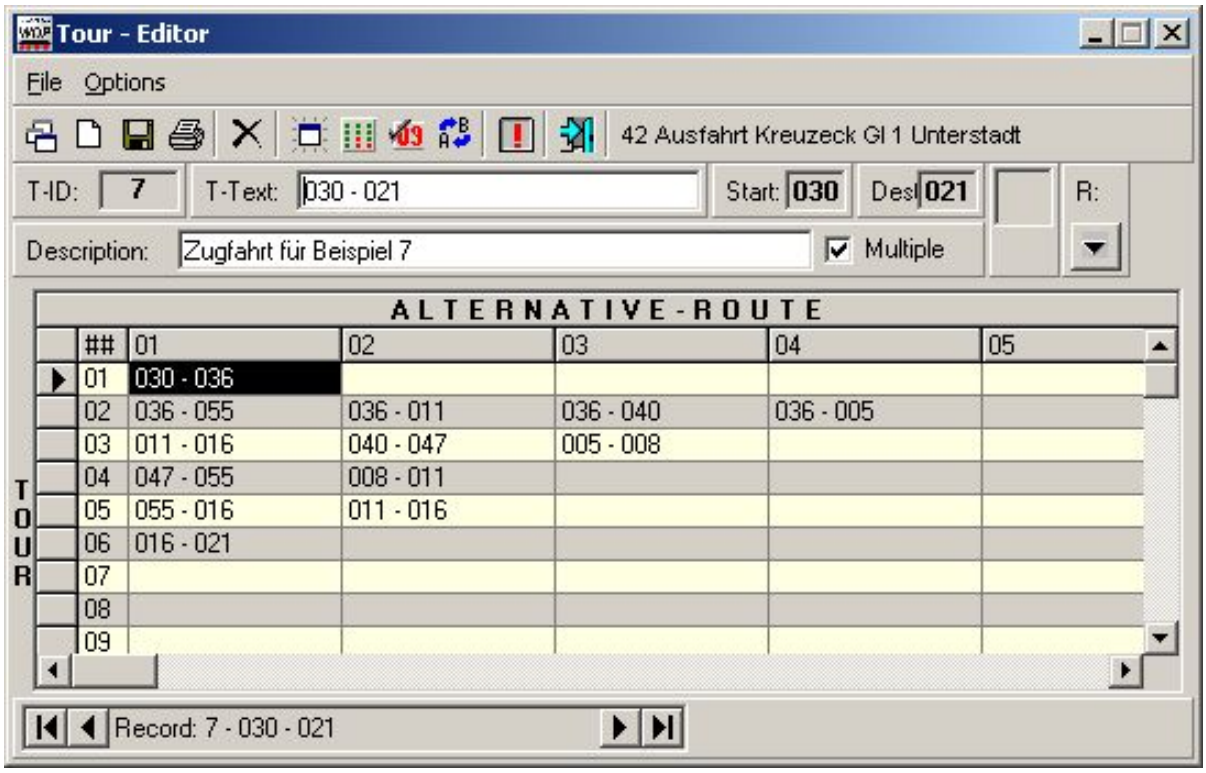
9.9.7 Tour with 2 alternative itineraries of routes with different length





This example is similar to the last. In columns 01 and 02 of row 02 the longer routes have been registered, while the shorter have been registered in columns 03 and 04 of this row.

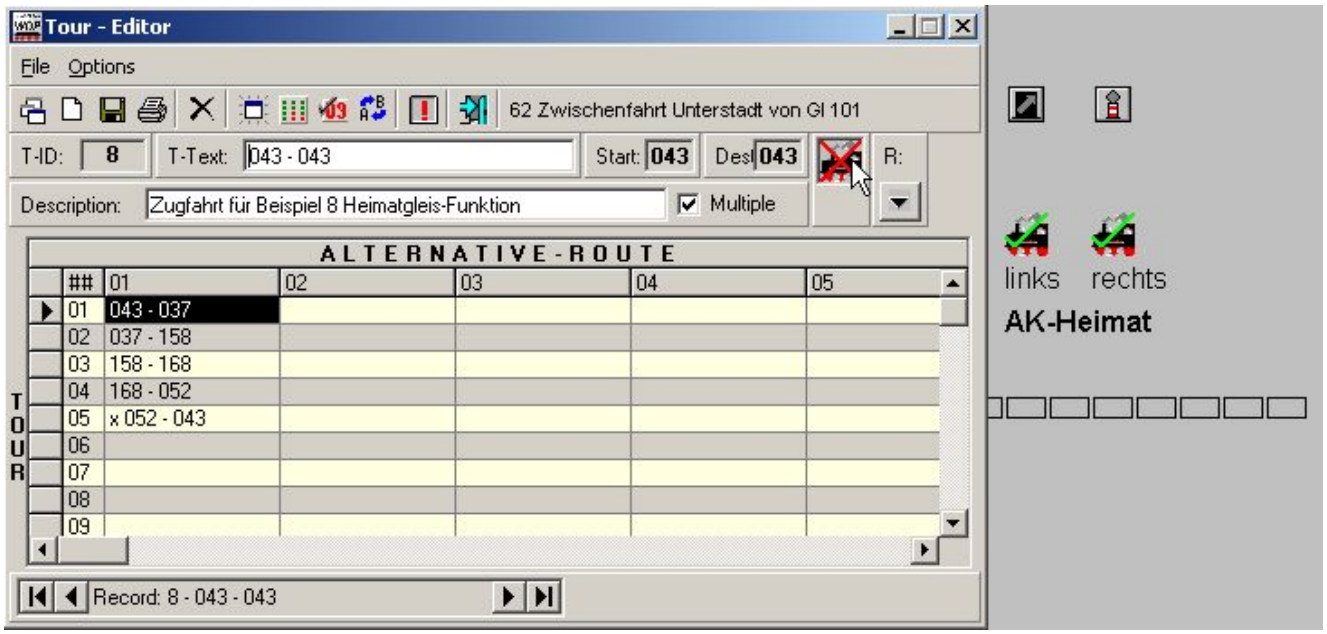
The special feature of this tour is column 01 of row 05. The route in column 01, row 02 is continued not until row 05 has been reached. Row 03 and 04 are left out, because in these rows no routes with a suitable start contact have been registered.



##	01	02	03	04	05
01	030 - 036				
02	036 - 055	036 - 011	036 - 040	036 - 005	
03	011 - 016	040 - 047	005 - 008		
04	047 - 055	008 - 011			
05	055 - 016	011 - 016			
06	016 - 021				
07					
08					
09					

9.9.8 Tour with „Home-track“-function

In this example a tour with a rotating operation has been created. This special feature of this tour is the route „x 052 – 043“ in row 05. This route is **only** allowed for locomotive 03 (see section **8.21.6**). According to section **9.5** a switch for the “home-track”-function of tours has been assigned. If this switched is set to RED then the locomotive number of locomotive 03 will be switched to red after the execution of route „x 052 – 043“.



Important notice!

Because of this route in row 05 this tour can only be driven to end with locomotive 03, because the last route of the tour is only allowed for this locomotive. All other locomotive will stop at the end of route 168 – 052, marked red in the tour event inspector and after the waiting time set according to section **4.15.3** marked with a hour glass. If this occurs you have to take care, that the locomotive is continued manually or by an automatic.

9.10 Tour event inspector

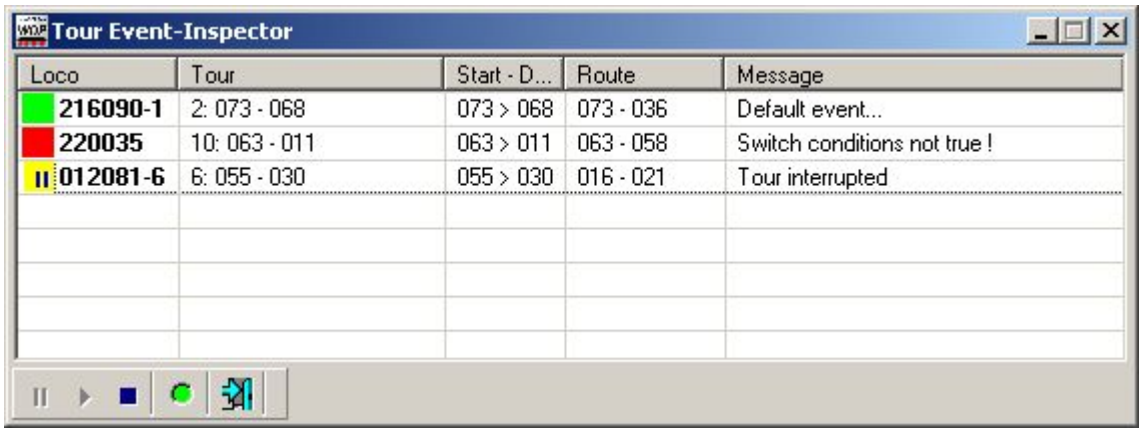
Every time a tour is started, the tour event inspector will open .

The column „Loco“ indicates the current state of the locomotive...

- green/red = drives/stopped and
- yellow = tour manually stopped (pause)
- red hour glass = tour stopped because of expired waiting time

The column „Route“ indicates the currently requested route.

The window of the tour event inspector can be resized windows typically in the same way as the tour editor.



With the buttons at the left bottom, the selected tour from the list can be paused, restarted and killed.

With the round green button **all** tours can be paused and restarted.

With a double click on a line in the inspector the locomotive control of the corresponded locomotive can be opened.

Important!
Never drive a train of an **active** tour manually or delete the train number in the track diagram, before you have killed or paused this tour.

With the symbols and you close the tour event inspector.

9.11 Waiting time for tours (Timeout)

This waiting time has to be set in the system settings according to section **4.15.3**. There and in sections **18.7.4** and **18.17.2** you can find additional information about the processing of a tour.

9.12 Closing the tour editor

Therefore select the menu command <File> <Close> or click on the symbol in the toolbar.

10 – PROFILE EDITOR

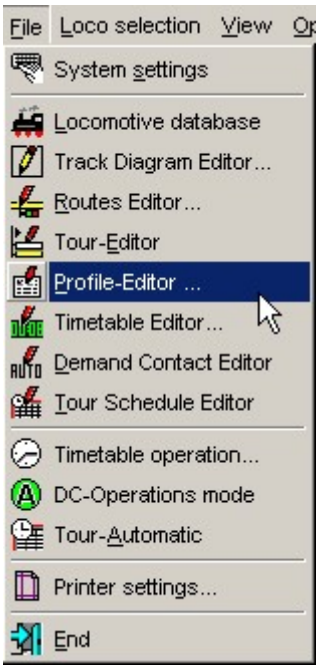
10.1 General

With the profile editor you can create for every route/locomotive-combination profiles. These profiles consist of contact events as known from the timetable. The profiles give you the possibility to use individual driving- and function-facilities of your locomotives, trains, cranes and functionality models in the automatic with demand contacts, the tour automatic and the semi-automatic operation (“Switch and Drive”) with a minimum of work. Until now this was only possible when using the timetable.

The following sections will explain the creation of profiles. The profiles offer you the following possibilities:

- The driving behaviour of different locomotives can be adapted individually to your routes.
- Even locomotives without load dependent regulation can be adapted for good driving behaviour.
- All special functions of locomotives and functionality models and even sounds can be included in automatic operations.
- When using profiles each locomotive can behave different when using the **same** route – independent from the setting in the routes editor or the locomotive database.
- The execution of crane macros is possible when using automatic operation.
- Individual sounds can be played anywhere and at any time.
- The usage of the turntable and transfer table can be adapted to every locomotive, this gives you more safety.
- Of course profiles can be also used when using routes via „Switch + Drive“ or when using tours.
- The profile editor is even a great tool for creating and configuring (several) timetables.
- Data records from the timetable and the profile editor can be exchanged via import and export functions.
- The timer function as known from the timetable is also available when using profiles.

10 – PROFILE EDITOR



The profile editor is similar to the timetable-editor. With the profile editor you can create for every route/locomotive-combination up to three profiles. Profiles can be exported to the timetable-editor or used with “Switch + Drive” and within the DC automatic and the tour automatic. Already existing timetable can also be imported to the profile editor for the usage in the other automatics.

As basis for your one profiles you can ask the program to create profiles automatically using the values from the locomotive database and the route editor. Then you have only to make the needed changes.

WIN-DIGIPET 9.0 will not allow creating more than 3 profiles for one locomotive/route combination.

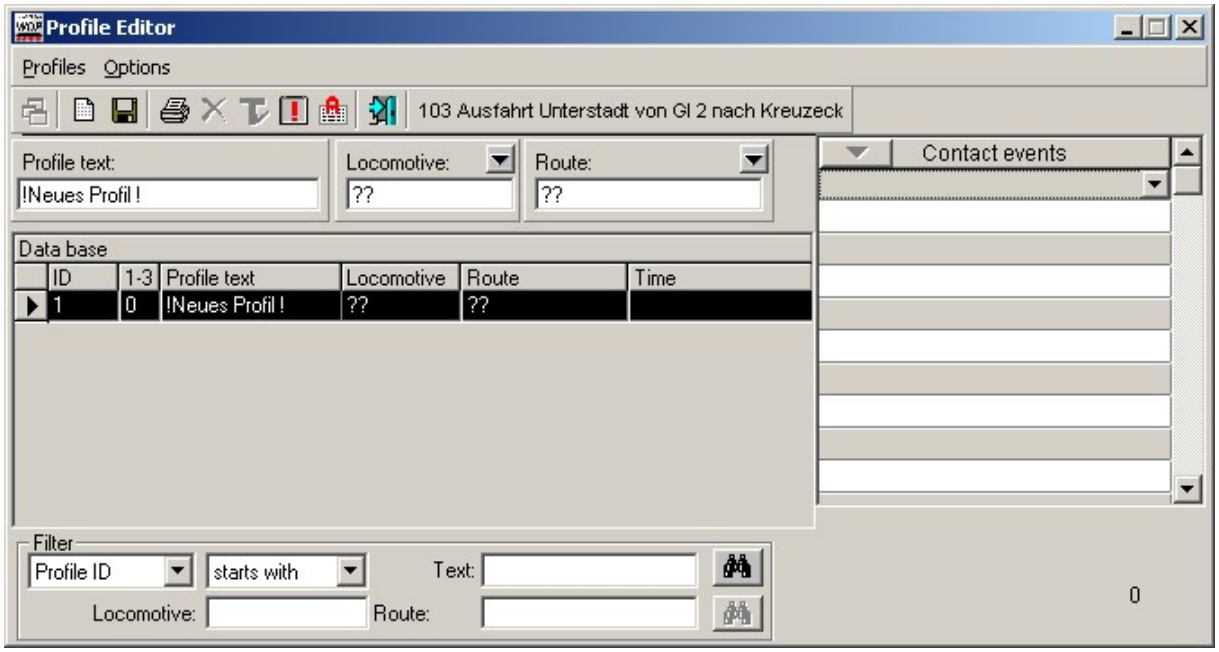
The profiles have to be activated in the system settings according to section **4.14.1**, otherwise the menu command and the toolbar icon are not available.

To open the profile editor select from the menu <File> <Profile-Editor> or click on the symbol in the toolbar.

10.2 Creating profiles

When opening the profile editor for the first time you will see data record with the profile text „!Neues Profil!“. Here you can register your first profile

Before the creation of profiles you should take the following points into consideration.

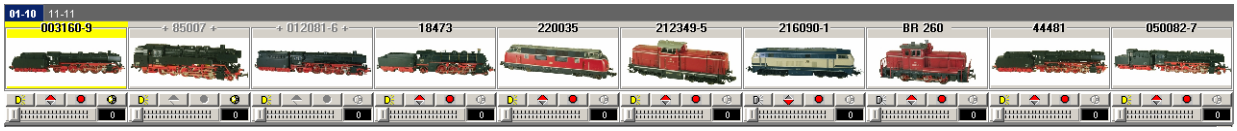


Criteria for the creating of a profile are e.g.:

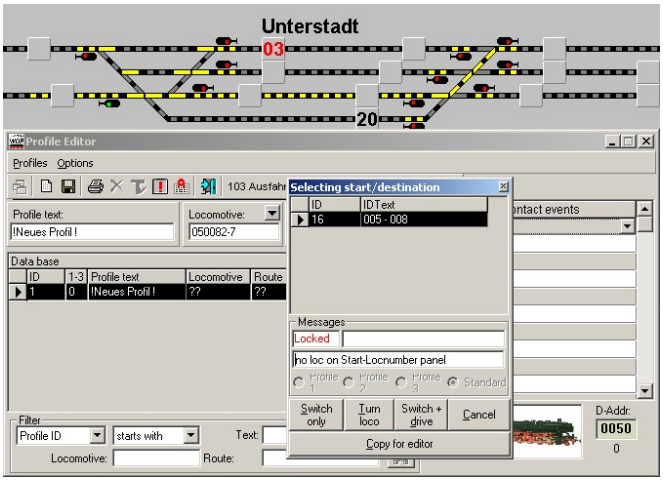
- A locomotive with an extremely different driving behaviour shall be adapted for several routes to the driving behaviour of the other locomotives.
- When leaving the train station with a passenger train e.g....
  ► the route switches first,
  ► 2 sec later a platform announcement will be played
  ► and after further 7 sec the train departs.
- A train shall stop exactly at the decoupling track.
- A warning whistle shall be played before a level crossing.
- A heavy train shall drive slower in curves than another train.
- A working train can stop for a short moment at a construction site for unloading material.
- And even a big wheel or the illumination of houses can be switched on and off, this list can be continued….

10.2.1 Manual creation of profiles

When creating profiles manually this can be done very quickly via the loco bar or opened locomotive controls.



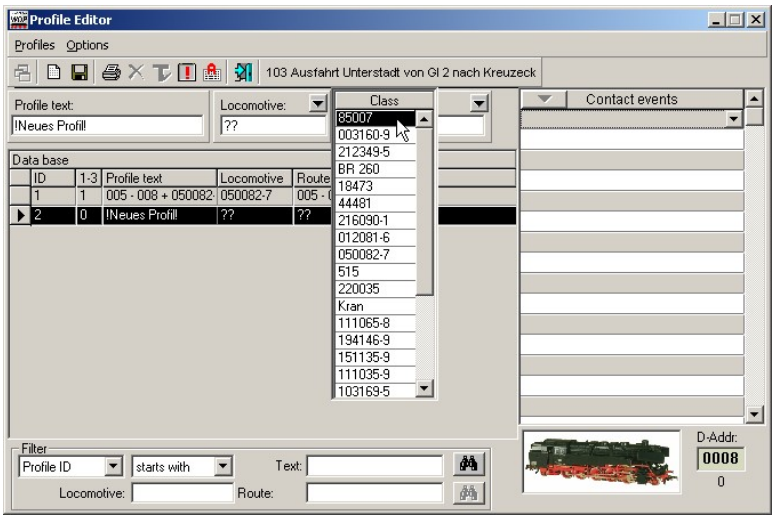
Click on the desired locomotive and drag the locomotive with pressed right mouse button into the field „*Locomotive*“ of the profile-editor. The locomotive has now been registered and is shown in the picture box at the right bottom of the editor.



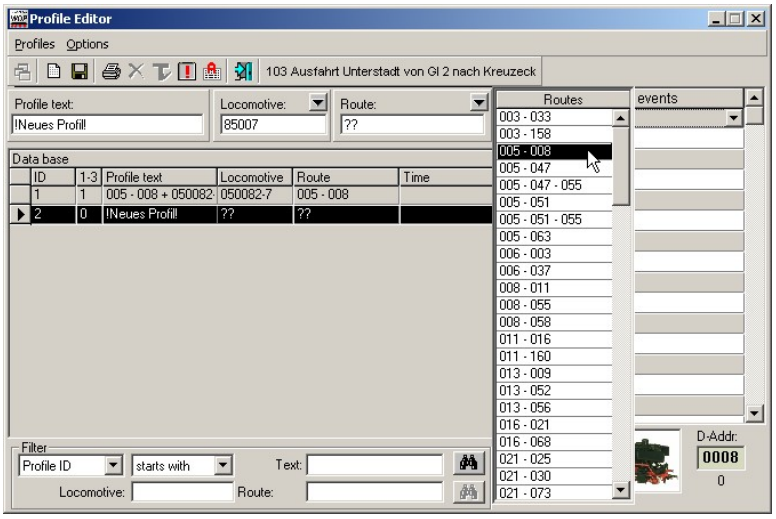
The desired route can be selected via the “Switch + Drive”-function (see **18.5.1***)*.

Click with the right mouse button on the start- and destination train number display in the track diagram.

The window "Selecting start/destination" appears. Select the desired route and transfer it via '***Copy for editor***' into the field „*Route*".



You can also select the locomotive and the route by clicking on the small arrows right above the fields "*Locomotive*" and *"Route"* and select the locomotive (only locomotives set to "Layout") and route from this lists with a double click. While selecting a route the route is also displayed in the diagram as known from the other editors.



The field „*Profile text*" can be used to give the profile a significant name. If you don't enter a text manually, then **WIN-DIGIPET 9.0** will assign a significant automatically when saving.

You can save the profile with menu command <Profiles> <Save profiles> or by a click on the symbol in the toolbar.

In this case **WIN-DIGIPET 9.0** creates automatically a profile text out of the ID-text of the route and the class of the locomotive separated by the sign „ + ".

After saving the new profile will be added to the profile list and an ID-number will be assigned automatically

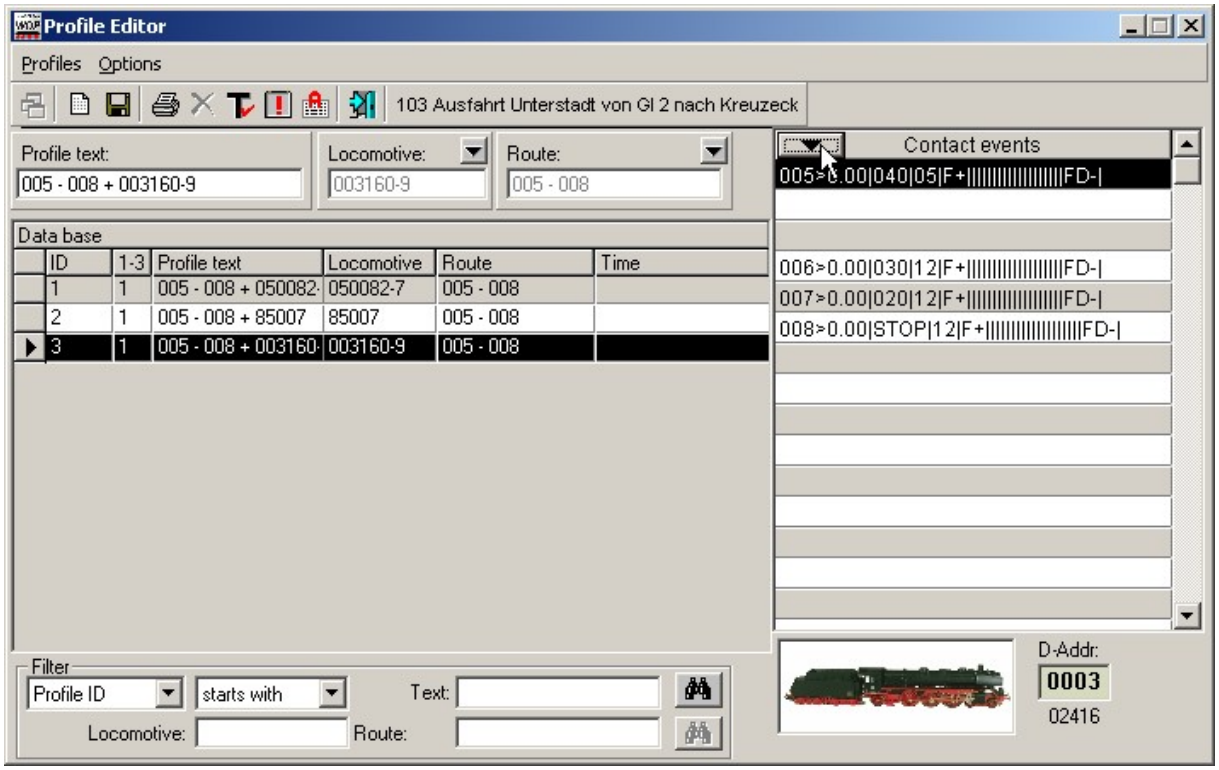
10.2.2 Contact events

After registering of the route, and locomotive the button Contact events is activated.

If you click on this button **WIN-DIGIPET 9.0** atomically copies all speed events of the route (from the index card “Start/Brake/Destination” of the routes editor) to the contact events. They are automatically converted to absolute speed values for this locomotive.

Example:

- The start speed of the locomotive is **50**
- the start speed for this route at contact 005 is „**-10**“
- this results to an absolute speed of „**40**“ for this contact event line
- this result to: „005>00.0|040|05|F+||||||||||||||||||FD-|“



This button was introduced to reduce your work, because already registered data is reused from the routes and locomotive database. From the locomotive database also the values for deceleration and acceleration are used.

When using this buttons, empty lines in the contact events don’t cause any problems. These empty lines are a result of non-registered data for route contacts K1 and K2 and are deleted after saving.

Be careful!
When editing an existing timetable, pressing this button could cause a lost of data, because your already registered contacts are overwritten.

Above the contact events the ID-Number and the description of the selected route is shown. Underneath this window, the picture and digital address of the locomotive is shown.

The number under the loco picture is composed as follows e.g. for 12416 it is the first profile of the locomotive with ID-Nr. 24 and the route with ID-Nr. 16.

If you click at the picture of the locomotive, its Loco-control will open as described in chapter **5.14**.

10.2.3 Creating profiles automatically

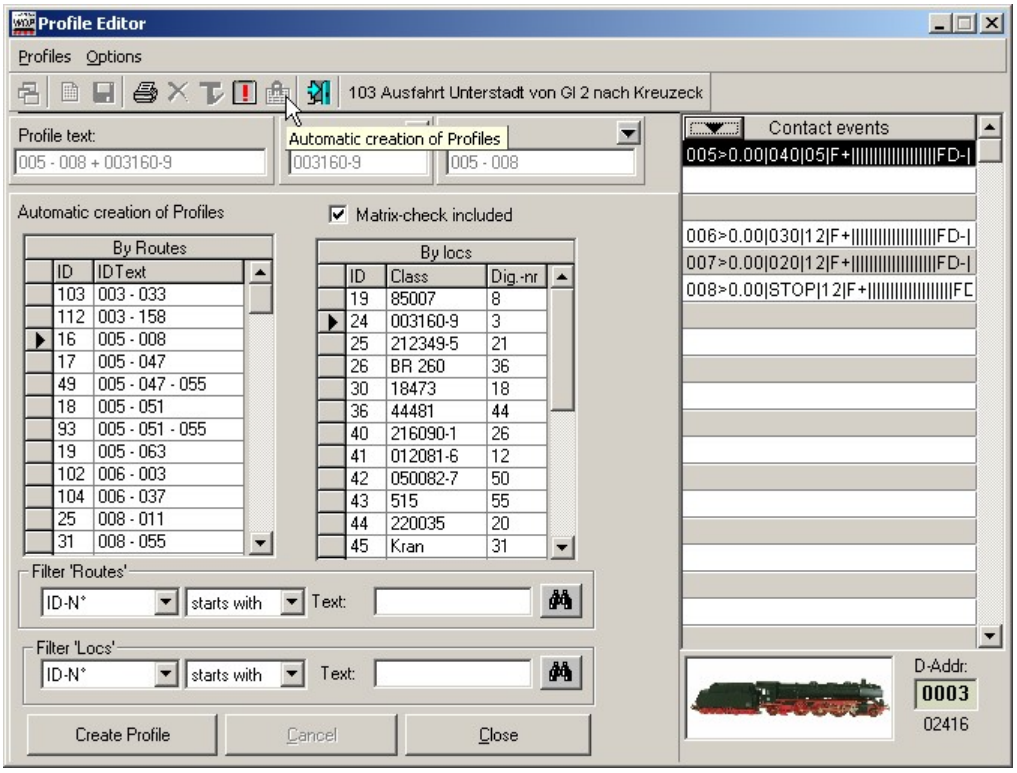
If you want to create several profiles according to criteria of section **10.2**, **WIN-DIGIPET 9.0** can save you a lot of time, if you force the program to create the raw profiles automatically.

Therefor select the menu command <Options> <Automatic creation of profiles> or click on the symbol in the toolbar.

A frame appears where you select different criteria which profiles should be created.

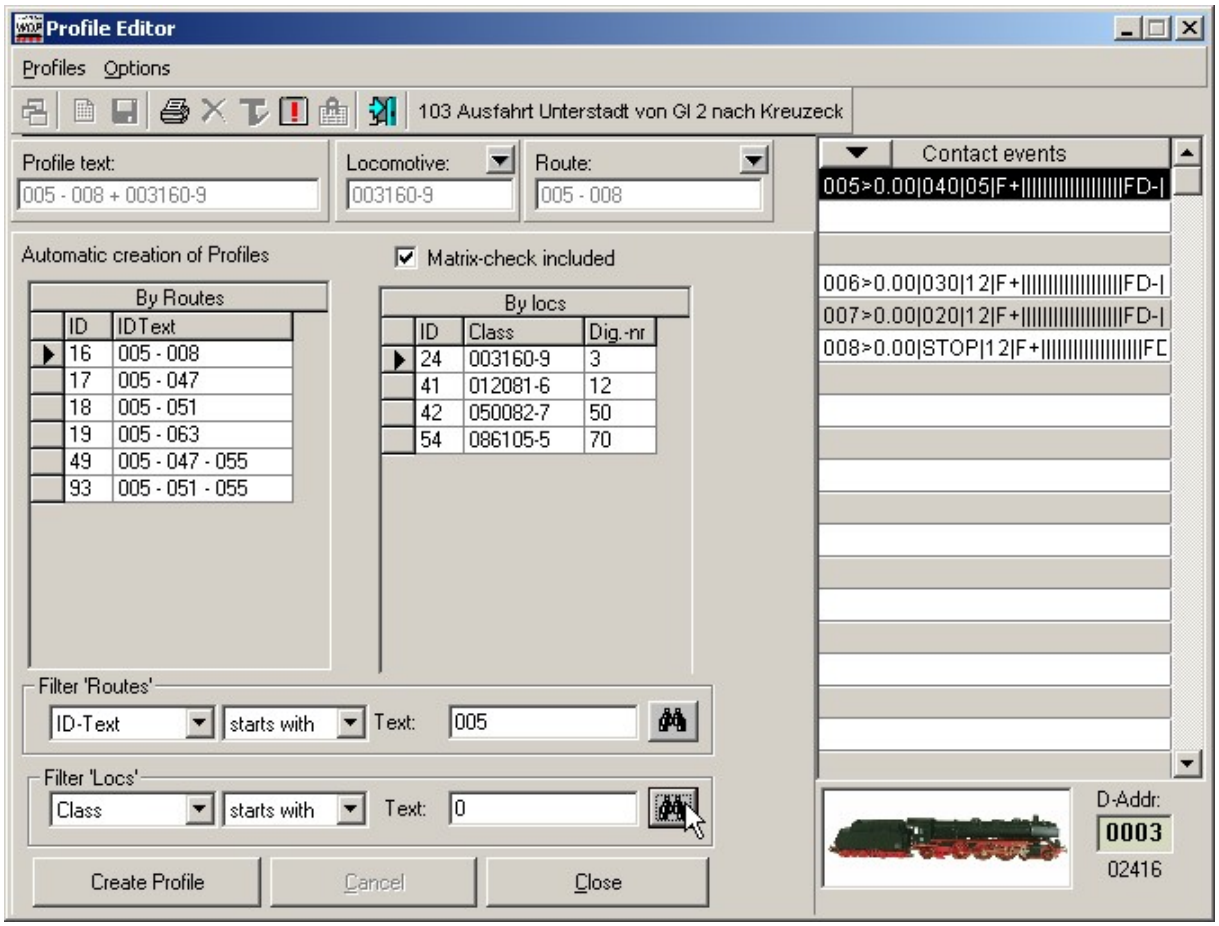
If you haven't selected any criteria yet, the lists will display all locomotives and routes.

Under the lists you will see some fields , which can be used to filter the displayed locomotives and routes.



The following example uses the filter to select all routes **beginning** with the ID-Text „005“.

All routes, which do not fulfil this criterion will disappear from the list “By Routes”.



By the filter for the locomotives, all locomotives with classes beginning with “0” have been selected and are display in the list by “locs”, after pressing the button .

You can reset the filters by selecting *“All”* from one of the combo boxes.

When you are satisfied with your selection of routes and locomotives, you can check *“Matrix-check included”* if you don’t want profiles to be created for route/locomotive-combinations that are not allowed by the routes editor (see **8.9**).

After making your selections you can confirm them by pressing the button **‘*Create profiles*’** and a new window will appear.

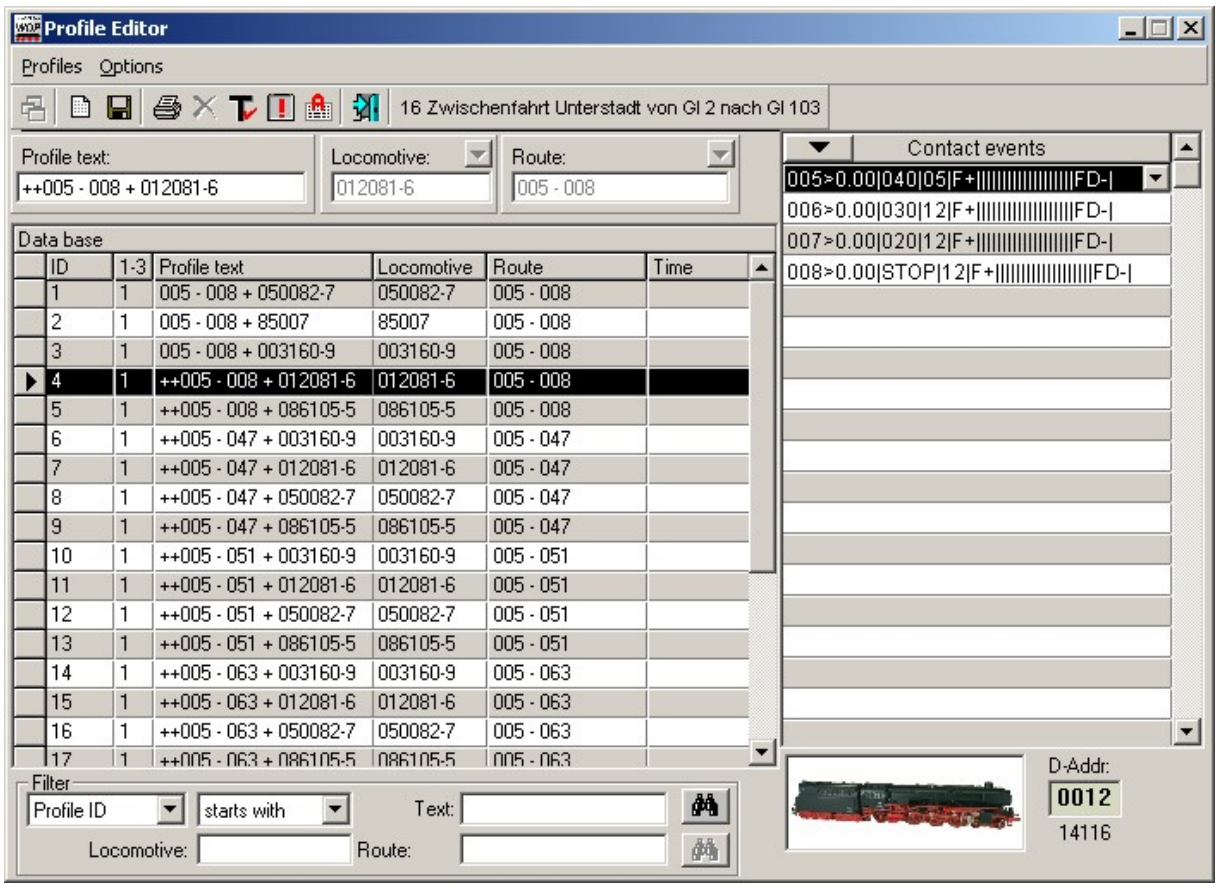
If your are satisfied with the information in this window, select **‘*Yes*’** and the profiles will be created automatically.

Already existing profiles will be found by **WIN-DIGIPET 9.0** and the program will inform you about this issue.

After selecting **'*OK*'** the new profiles can be found in the profile editor.

For differentiation between already existing and automatically created profiles, the profile texts of automatically created profiles begin with „++“.

For these profiles the contact events have also been automatically registered. This events base on the settings in the locomotive database and the routes editor (see **8.7.3**) for the processed routes and locomotives.



The contact events are created in the same way automatically as described under section **10.2.2**.

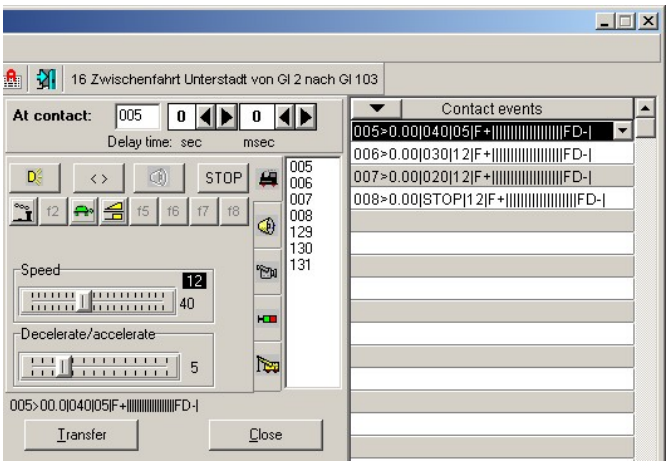
TIP!
Every time you change an automatically profile manually you should delete the two characters “++” from the profile text. This is a good indicator for you, if you have adapted these profiles manually or not.

10.3. Adding and changing contact event lines

You can improve the contact events of your profiles. This is always possible. It is irrelevant if you created the profiles automatically or if you registered the contact events automatically in a manually created profile, you can always change them to your needs.

The automatically registered contact events are based on the data of your locomotive and routes databases. They are valid for all trains, but with the changes in the following sections you can further adapt and improve them.

If you want to change or add contact events, click on the line under „Contact events“ and on the selection arrow which appears.



The window „At contact:“ appears.

In this window you set which events should take place when a locomotive passes over certain contacts. Five different types of commands are available.

These are...

- Command to locomotives like speed changes, switch the light etc.
- playing sound-files
- playing video-files
- switching of solenoid devices
- activating crane commands

The following sections will describe these possibilities.

You can assign a “delay time” of max. 90 seconds to each contact (the command will be processed **after** the delay time). Each second is subdivided into 1000 milliseconds. To adjust, please use the two arrows next to the panels “sec” and “msec”. This feature offers a great variety for operation modes; these will be described later in the section “Use of delay time”.

In the following table, all elements of the loco command line are described which will be displayed in the window “contact events”.

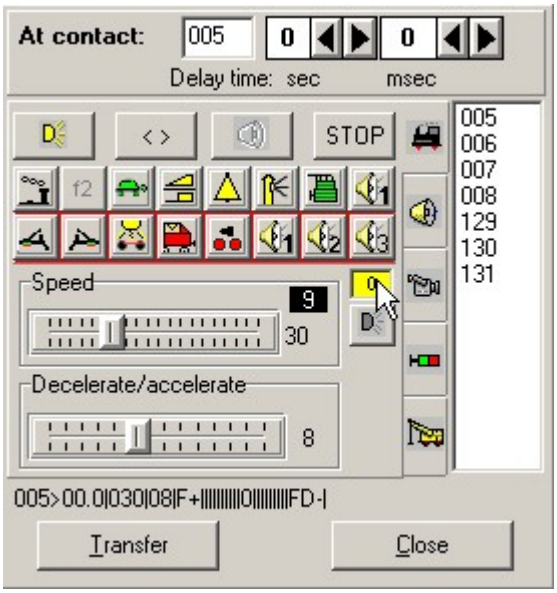
The detailed explanation of the following example is:

011 > 00.0 I 040 I 10 | F+ If1If2If3If4|f5|f6|f7|f8| S | 09 |f1|f2|f3|f4|f5|f6|f7||f8|FD+ |

011	=	Number of contact (three digits)
> und **|**	=	hyphens
00.0	=	Delay time 00. Seconds and 0 tenths of a second
040	=	Speed (in percentage - three digits – of the max. speed at this contact)
10	=	Delay factor (1 = slowly and 18 = fast)
STOP	=	Immediately stop, without consideration of a delay factor when the delay factor is 18, otherwise with consideration of the delay factor
<< >>	=	Change direction of locomotive
F+	=	Switch on locomotive function
F-	=	Switch off locomotive function, respectively keep function “Off”
MAG	=	Switch a solenoid device – e.g. followed by „S“ for signal, „W“ for single turnout or „D“ for a three way turnout, the other abbreviations of the solenoid devices are explained later; the designated numbers are codes, which are automatically assigned by the program.
WAV	=	WAVE-file < file name > activate
f1 ...f8	=	Special function f1 etc. = active
S	=	Locomotive-Sound „On“
09...	=	Functions decoder with address 09, as well as the indicated special functions f1 active etc..
FD+	=	Switch on function
FD-	=	Switch off function of the function decoder, respectively keep function “Off”

10.3.1 Locomotive / running properties

Click at the “Locomotive symbol” in the window „At contact:“.



The command buttons are self explanatory, respectively are equipped with yellow marked “quick-infos” and are easy to understand.

If the locomotive function **‘*func*’** is assigned to the “**Telex**”- coupler, then you normally decide to keep this function **“OFF”**, except for clearly defined shunting.

Changes of direction:
Some loco decoders are just able to switch to the opposite direction tenths of a second later, after the locomotive has stopped. Therefore practically, you use the command for changing directions for the same locomotive, in a separate command line of your timetable, one “model-railroad-minute” after the stop-command.

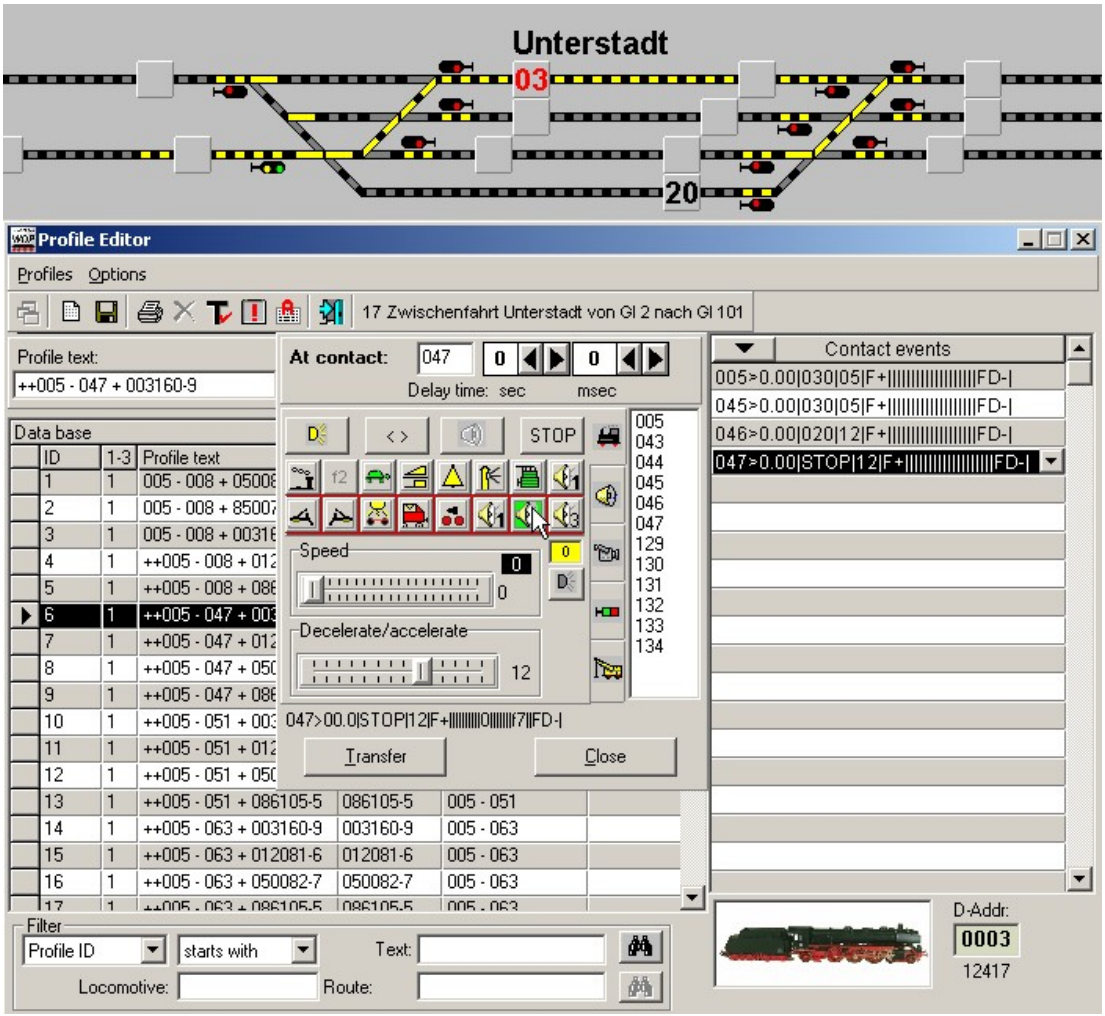
Loco sound:
You can play the sound which you have recorded for a specific locomotive (see locomotive-database, chapter **5.3.2**) directly in a timetable line. If you have not registered an individual sound for a locomotive, the panel at the right side of STOP will be blank. If a sound is assigned, a speaker-symbol will indicate, that a sound is registered to a timetable line. A grey-marked speaker-symbol indicates, a sound is not assigned for playback to that particular line.

Loco stop:
If you click on the button „**Stop**“ at the destination contact, the locomotive will be stopped immediately when the release condition is fulfilled (see **8.7.2**). For a slower deceleration you can even enter a delay (Value <18 and >0). In this case it is irrelevant if you entered the locomotive database “Immediate stop” or “Stop with delay” for this locomotive.

Using the pictogram-buttons f1 to f8 you can send special function commands to the locomotive e.g. switch on/off the smoke generator. The tool tips describe the several functions.

Furthermore you can use a functions decoder which is assigned to a locomotive (locomotive-database, chapter **5.6**) in a timetable line. If a function decoder has been combined with a locomotive in the locomotive-database, a yellow marked panel will show the address in the second “f...”-line and right of it, the corresponding functions f1 to 8 are shown.

The driving behaviour of the locomotive can be adapted with the sliders “Speed” and “Decelerate/accelerate”.



In the last line of the contact event the automatically registered stop command is displayed.

The following points ought to be changed in this contact event line...

- Switching f7 „squealing brakes“ on and
- Stop slowly with deceleration rate „12“.

The changes will result to this command line:

047>00.0|STOP|12|F+||||||||||0||||||f7||FD-| .

This means...

- **047** the number of the contact
- **>** hyphens
- **00.0** no delay (= no waiting time) at contact 047
- **STOP** the stop command for the locomotive
- **12** is the adjusted acceleration/deceleration (1 to18)
- **F+** Loco-function “ON”, **||||||||||** = special functions f1 to f8 not activated
- **0** = function decoder with address 0 and f0 to f8 of function decoder not activated
- **FD-** = function-decoder-function “OFF”.

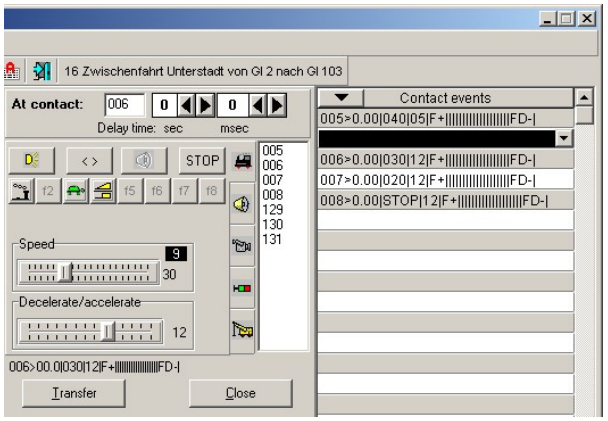
Click at ‘***Transfer***’ and the locomotive-command line will be recorded in the frame “contact events” and automatically the next command line will be activated.

10.3.2 Playing sounds

In another profile you want to play a sound file at a contact. For this select the desired line in the contact event; the line will be under laid in black.

Before this line a new line ought to be inserted. For this press the right mouse button and select <Insert line> in the appearing context menu.

By this you get a new empty black under laid line. Click on the selection arrow which appears. The window „At contact:“ appears.



Click on the symbol  to open the index card „Sound“.

All wave files in the subdirectory \SOUND of C:\WDIGIPET are displayed (see **3.6.1**).

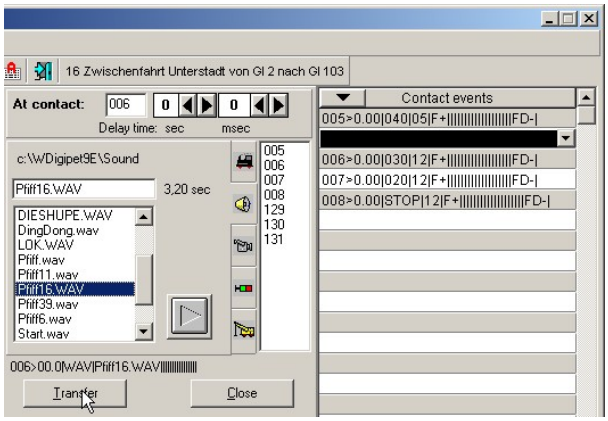
In the list field at the right side all contacts of the actual route are listed. Select the desired contact by mouse click or you can enter it into the field beside of „*At contact:*“ by keyboard.

Reasonable contacts in our example are 005, 129, 130 and 131 or 006.

In our example click on 006 and the number is automatically displayed in the field beside of „*At contact*“.

Also select the sound file you want to play. The file name and playing time is automatically displayed above the file selection list field.

For testing purposes you can also play the sound file immediately by pressing the button  .



At the bottom of the frame, the command line is displayed similar to a locomotive command line.

If you are satisfied with your selection, click on '***Transfer***'.

10.3.3 Video sequences

If you want to play a video in a profile contact event line, you have to do the following. Select an empty line in the contact events and click on the selection arrow which appears. The window „At contact:“ appears.

Click on the symbol  to open the index card „Video“.

All AVI files in the subdirectory \VIDEO of C:\WDIGIPET are displayed (see **3.6.1**).

The selection method for videos is the same as for sound files explained in section **10.3.2**.

For testing purposes you can also play the video file immediately by pressing the button  . The video is played in an extra window.

At the bottom of the frame, the command line is displayed similar to a locomotive command line.

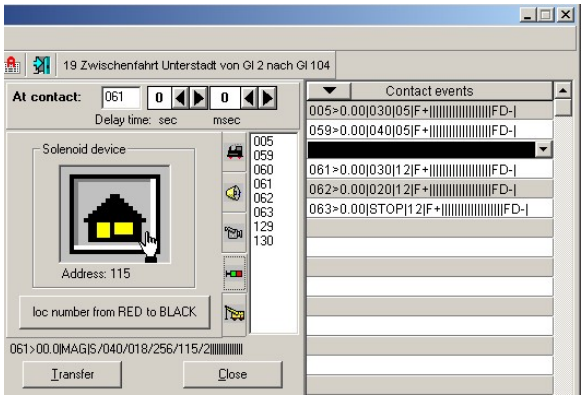
If you are satisfied with your selection, click on '***Transfer***'.

10.3.4 Switching solenoid

With this function you can switch at a contact solenoid devices. Nearly all solenoid devices can be used **except** crossings. The handling of this function is similar to add-on switches in the routes editor (see **8.8**).

If you want to switch a solenoid device in a profile contact event line e.g. when contact 017 is occupied, you have to do the following. Select an empty line in the contact events and click on the selection arrow which appears. The window „At contact:“ appears.

Click on the symbol to open the index card „Solenoid device“.



In the list field at the right side all contacts of the actual route are listed. Select the desired contact by mouse click or you can enter it into the field beside of *„At contact:“* by keyboard.

In our example click on 017 and the number is automatically displayed in the field beside of *„At contact“.*

At the beginning of a new solenoid device registration the picture box below „Solenoid device“ is empty. Now drag the desired solenoid device via „drag & drop“ into the empty picture box. Select the desired state of the solenoid by clicking on the picture of the device.

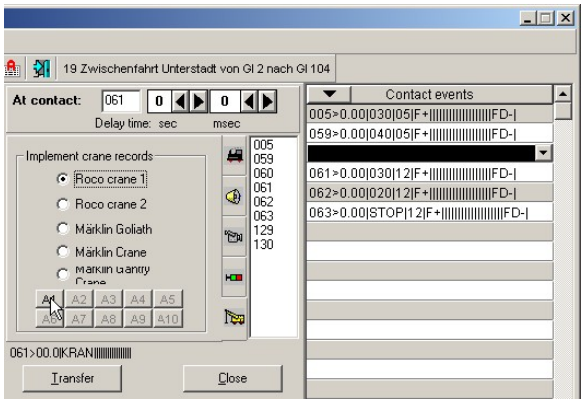
At the bottom of the frame, the command line is displayed similar to a locomotive command line.

If you are satisfied with your selection, click on ‘***Transfer***’.

With this type of command you can switch also all kind of functions, which are switched with a k83/k84-decoder, and also a turntable or moving table (see **14.10**).

10.3.5 Executing crane macros

If you want to execute your recorded crane macros, click on the symbol to open the index card for controlling cranes is displayed.



Select the contact and the crane macro you want to execute.

At the bottom of the frame, the command line is displayed similar to a locomotive command line.

If you are satisfied with your selection, click on ‘***Transfer***’.

This function is also interesting for you user, who even don't own a crane!"

The crane macros can be used for special actions with locomotives, that can be executed manually or by timetable after recording without using routes etc..

10.3.6 Use of "delay time"

The following examples will show you, how to use this feature easily for great variety of operations on your model railroad.

3. You would like to playback a typical announcement of a railway station at the same contact before the train leaves ("Attention at platform 6. The train will depart soon. Doors will close automatically"). The train shall depart, AFTER the sound has finished – this would be the right way.

   Therefore you have to register the following contact-events:

   Play a wave file at contact 21 2 seconds after switching the route and the signal and in the second line start to move the train with 30% of the max. rated speed and acceleration 5 at the same contact, but release this command **after** seconds and (>07.0).

   You have to check this delay time of course and may correct it manually referring to the length of the announcement you would like to use.

4. You don't have a breaking contact before a stop contact for a specific track section, because you couldn't install one (tunnel) or you wanted to save contacts.

   You can manage this track section with at least 2 contacts (start- and destination contact):

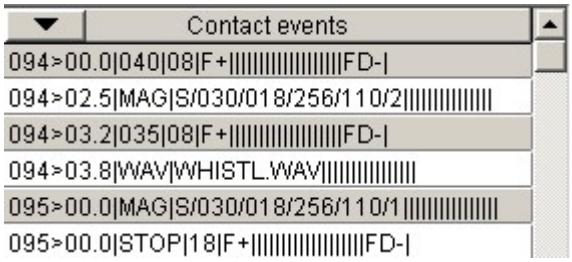
   At contact 94, start the locomotive with 20% of the max. rated speed and an acceleration of 8.

   Also at contact 94, after 6 seconds and 500 milliseconds(>06.5), slow down the loco (this is a kind of virtual contact).

   Stop loco at contact 95.

5. You want a locomotive to depart, close a level crossing, slow down the train, and play a sound at the level crossing (bell, horn).

   This all can be programmed at the start contact.



This example assigns four commands simultaneously to contact 094:

- Start loco with 40% of max. rated speed
- switch a solenoid device after 2.5 seconds (close the level crossing)
- after further 3.2 seconds, slow down the loco back to 35% of the max. rated speed
- play a sound after further 3.8 seconds.

At contact 095...

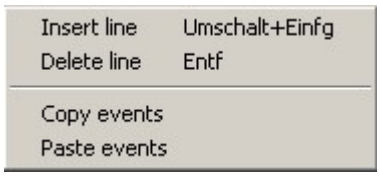
- a solenoid device is switched (open the level crossing)
- the locomotive is stopped.

Remark!
You should use this example just as “expedient” and NOT to save feedback contacts.

As you can see, there are nearly no limitations to use this feature. Further possibilities would be, to schedule a planned stop of a train on a long route and after a break, the train should start riding again. Also it is easy to program to drive on a turntable and a reconstruction of a turntable with additional feedback contacts would not be necessary anymore.

On the other hand, for the example with the turntable there is still an insecure factor: “Warm” locomotives – which are in operation for quite a long time in this session – will have different running properties than “cold” locomotives”.

10.3.7 Editing tools



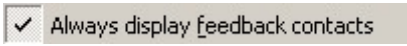
If you want to add or delete contact event lines or want to copy and paste contact events you can do this with a context menu that can be reached via the right mouse button. This menu offers you several self-explanatory editing tools.

The last to commands offer you the possibility to copy contact events from one profile for a route/locomotive-combination to another profile using the same route and another locomotive.

Attention!
The commands to copy the contact events copy and pastes always **all** contacts events independent from the selected line.

10.4 Different options

The menu <Options> gives you access to additional functions.

- **Always display feedback contacts** 

(see **7.4**)

  If you want to see all feedback numbers in your track diagram **every time** you open the profile editor check this switch.

  Be careful!
  If you want your profile with a locomotive (see **10.5)** in the simulation, then feedback contacts won't be highlighted in red and the feedback contacts can't be switched on and off with the mouse.

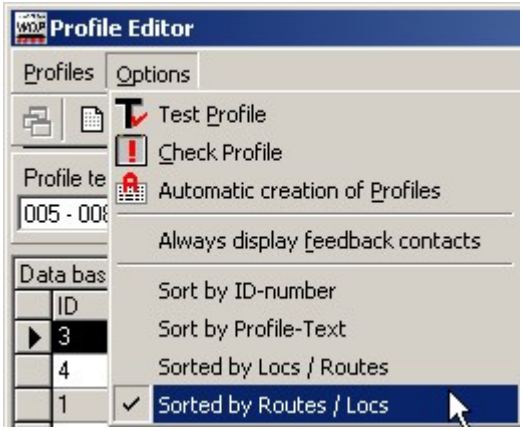
  Because of this you should always switch this function off before testing locomotives with the simulation.

- **Different list sorting**

  Here you can choose the sorting criteria for the profiles list.

  You can also change the sorting criteria also by clicking on the different list headers (ID, Profile-Text, Locomotive or Route). Repeated clicks on the same header change the sorting direction (up/down).

  The last two sorting options offer to sort by locomotives and routes at the same time with sorting priority (e.g. first by locomotives then by routes and the other way round).



10.5 Testing profiles

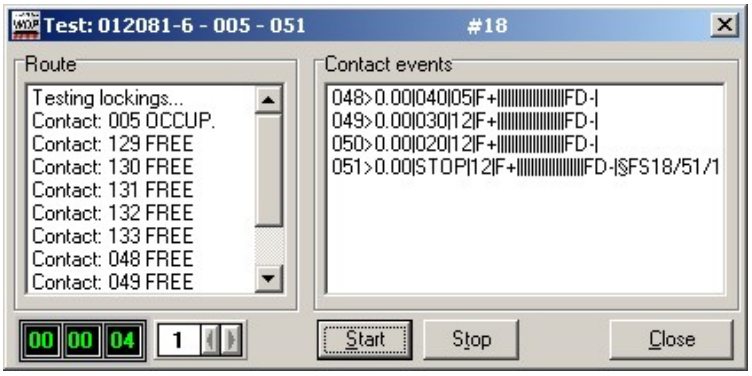
All registered profiles can be tested immediately after their registration. Therefor select the profile to be tested and place the locomotive/train on the start contact of the selected route.

Select the menu command <Options> <Test Profile> or click on the symbol in the toolbar. A window „Test...“ will appear.

On the left-hand side you see the switching conditions, on the right hand side the contact events of the route belonging to this profile line. Further down, a digital clock with the starting time of this route appears. Next to it the time factor model railroad time/ real time is displayed which can’t be changed, because the times for profiles are always real time. If you export profiles to the timetable the real time is converted to model railroad time.

Put the relevant locomotive on the starting contact and press ***‘Start’***.

The digital clock starts running, the switching conditions are checked, the route is switched, and the contact events are masked as soon as they have been executed (by the locomotive.



Caution!
If you get the message "**Loco not on starting contact** the relevant locomotive is not positioned on the starting contact or wrongly positioned. Drag the correct locomotive from the locomotive selection onto the starting contact and repeat the test. The route will be switched if all conditions are me.

The clock stops when the destination contact has been reached and therefore the route release condition is fulfilled.

If you have **not** entered a release condition for a route for whatever reason – this would be a mistake – the clock will not start, if you click on “Start”; the route will not be released if the destination contact is reached. The destination contact must be entered always in the upper panel of the routes editor (see **8.7.2**) (supplementary marked with “dest. Contact).

Note!
The test window has to stay active during the test run, otherwise the driving time is not recorded.

You can also use the simulation for testing lines. But be careful, because the arrival time in the simulation will differ in most cases from the arrival time of the train on your model railroad layout. Therefor you should register the arrival time again with a real locomotive.

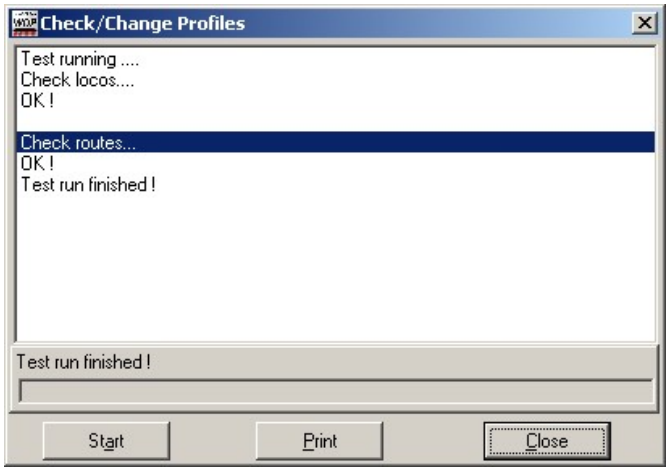
You will notice, that not all contact events are masked in the contact events window, if you made a mistake. You can make your corrections immediately.

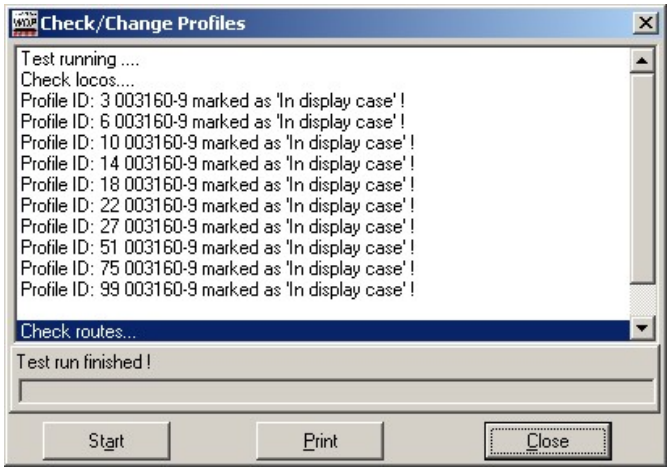
The switch ***'Stop'*** stops the locomotive during the test run, should an error occur.

You leave the test program with ***'Cancel'*** and the **time** is **automatically** recorded in the **column „Time**" in the list window of the **Profile editor**.

10.6 Checking profiles

For an automatic check of all profiles, select the menu command <Options> <Check profiles> or click on the symbol ! in the toolbar. Afterwards press in the window „Check/change profiles" ***'Start'*** and **WIN-DIGIPET 9.0** will display the check results.





In the left picture the check found no errors. The right picture shows the result of a check, where locomotive 003160-9 has been set from "Layout" to "Display case". Corrections of wrong profiles have to be made manually.

10.7 Selecting registered profiles

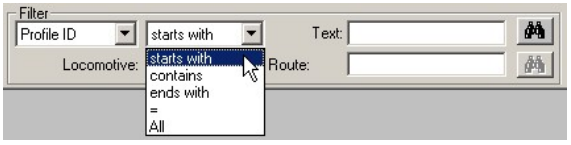
For selecting of profiles for editing etc. **WIN-DIGIPET 9.0** offers to possibilities:

- Selection via text inputs and filters
- Selection using the start-/destination-function in combination with a locomotive and a route.

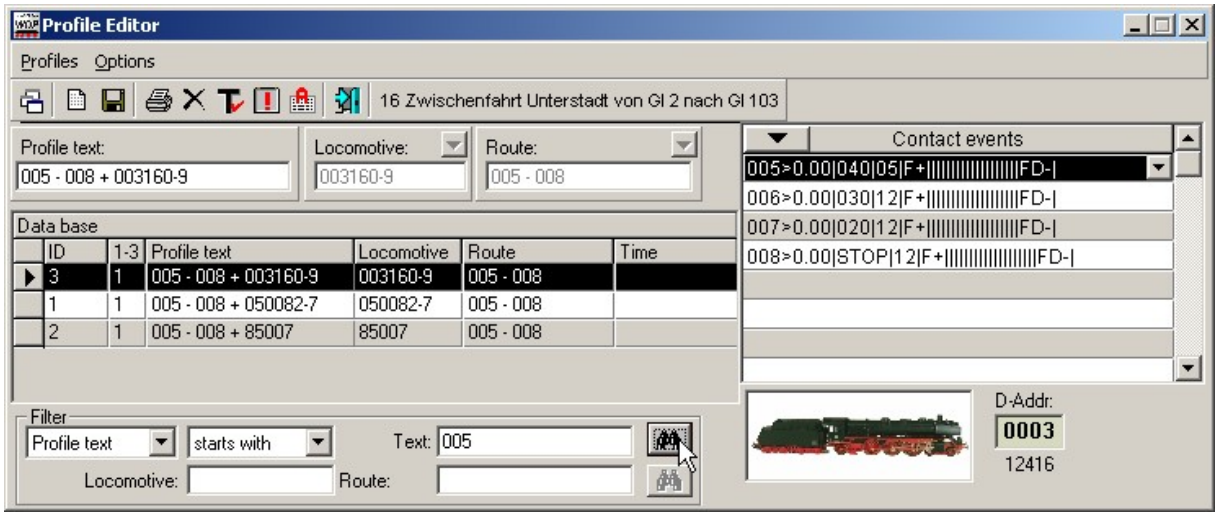
10.7.1 Selection via filters

Registered profiles can be selected in the profile editor with the two filter selection frames using different criteria.

and



Therefor select first the two filter functions and enter a text in the field „*Text*".

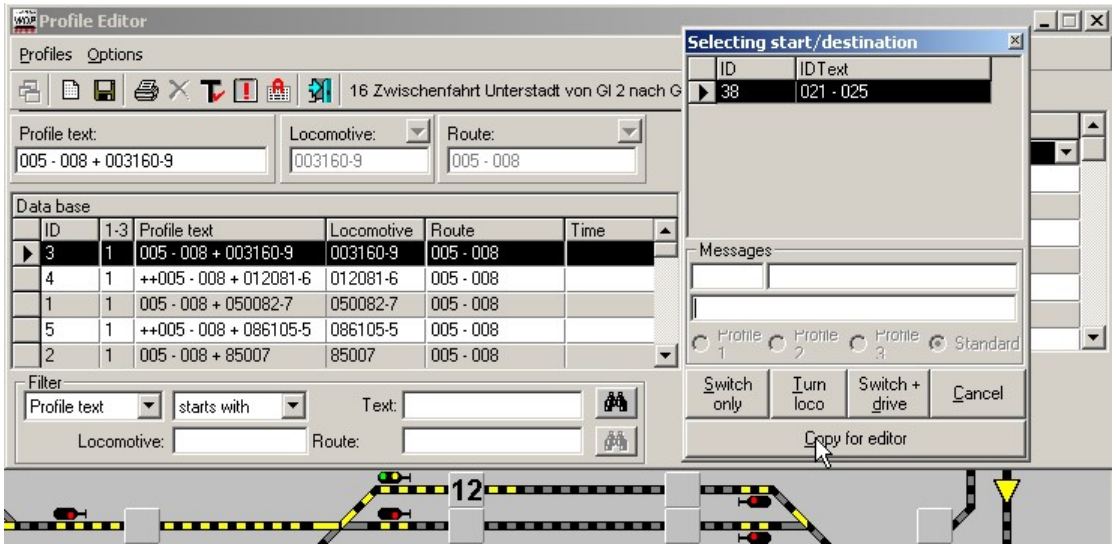


Afterwards click on  and the results are displayed or an error message will occur if no profiles were found.

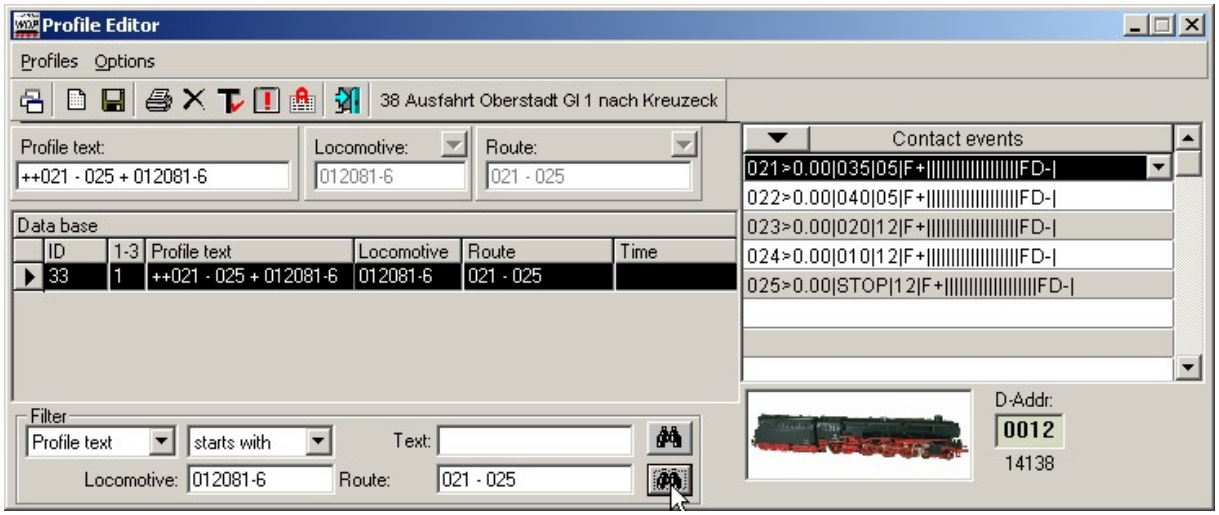
After a click on the symbol  the profile editor will display again all profiles.

10.7.2 Selection using the start-/destination-function

With this method you can directly search for a profile with a specific locomotive/route combination. For this function the desired locomotive has to be registered on the start train number display of the route. Select the route with the start-/destination-function according to section **18.5.1**.



The route will be highlighted in yellow and the window "Start/Destination selection" appears. After a click on the button '***Copy for editor***' the locomotive as well as the route will be automatically appearing in the search fields at the bottom the window.



Now click on the symbol  and the profile editor will show you the suitable profiles.

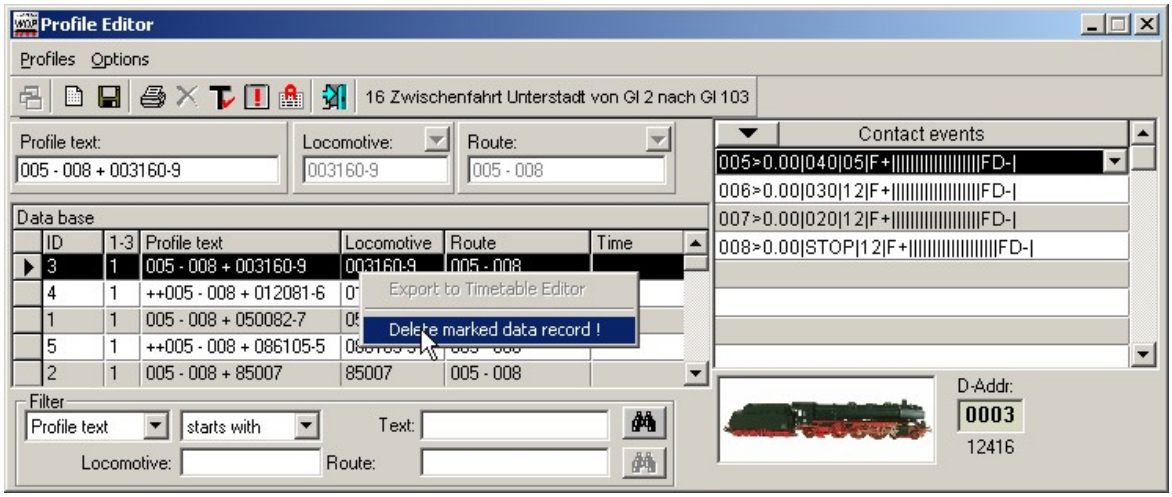
Hint!
This selection function only works if a locomotive is registered on the start train number display otherwise no locomotive will appear in the field „*Locomotive*" and the button  will be deactivated.

10.8 Deleting profiles

You have two possibilities for deleting profiles.

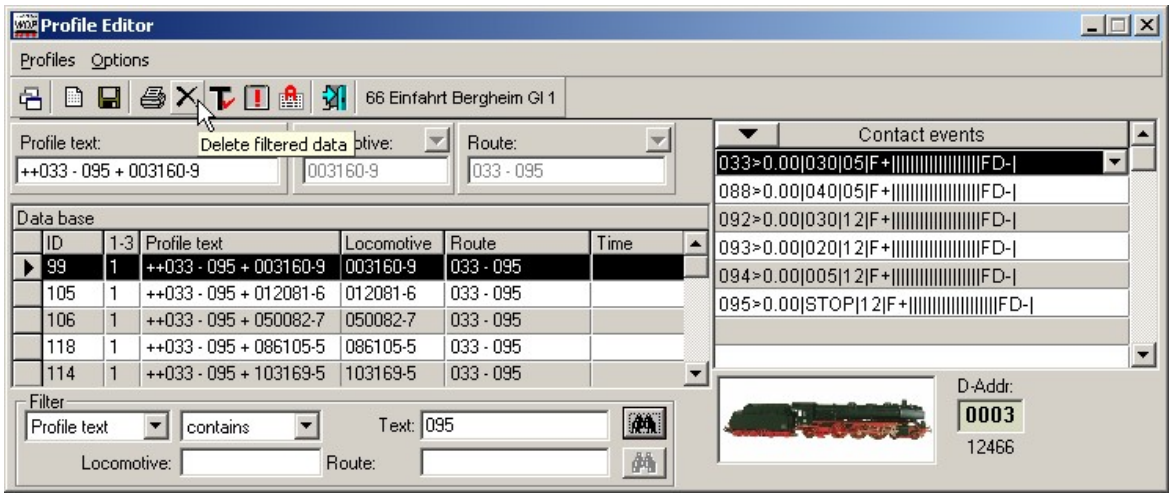
- **Deleting a single profile**

  For this purpose mark the profile to be deleted and open the context menu with the right mouse button. Select the menu command <Delete marked data record> and the marked record will be deleted from the database.



- **Deleting filtered profiles**

For this purpose select (a) data record(s) using the filter functions described in section **10.7**.



If your satisfied with the filtered list, select the menu command <Profiles> <Delete filtered data> or click on the symbol in the toolbar of the profile editor.

The filtered profiles will be deleted from the database.

Information!
If you have selected the filter criteria „ALL“ all profiles will be displayed, but for your own protection the menu command and the symbol in the toolbar are deactivated.

10.9 Printing profiles

For this purpose select the menu command <Profiles> <Print> or click on the symbol in the toolbar.

The displayed options are self-explanatory, you can e.g. choose between the options „*All*“ and „*Headlines*“ to decide what shall be printed.

You can even export the printout to the file „Profile.rtf“ in your **WIN-DIGIPET 9.0**-Folder.

10.10 Exporting profiles to the timetable editor

If you want to export profiles to the timetable editor both editors have to be **opened at the same time**.

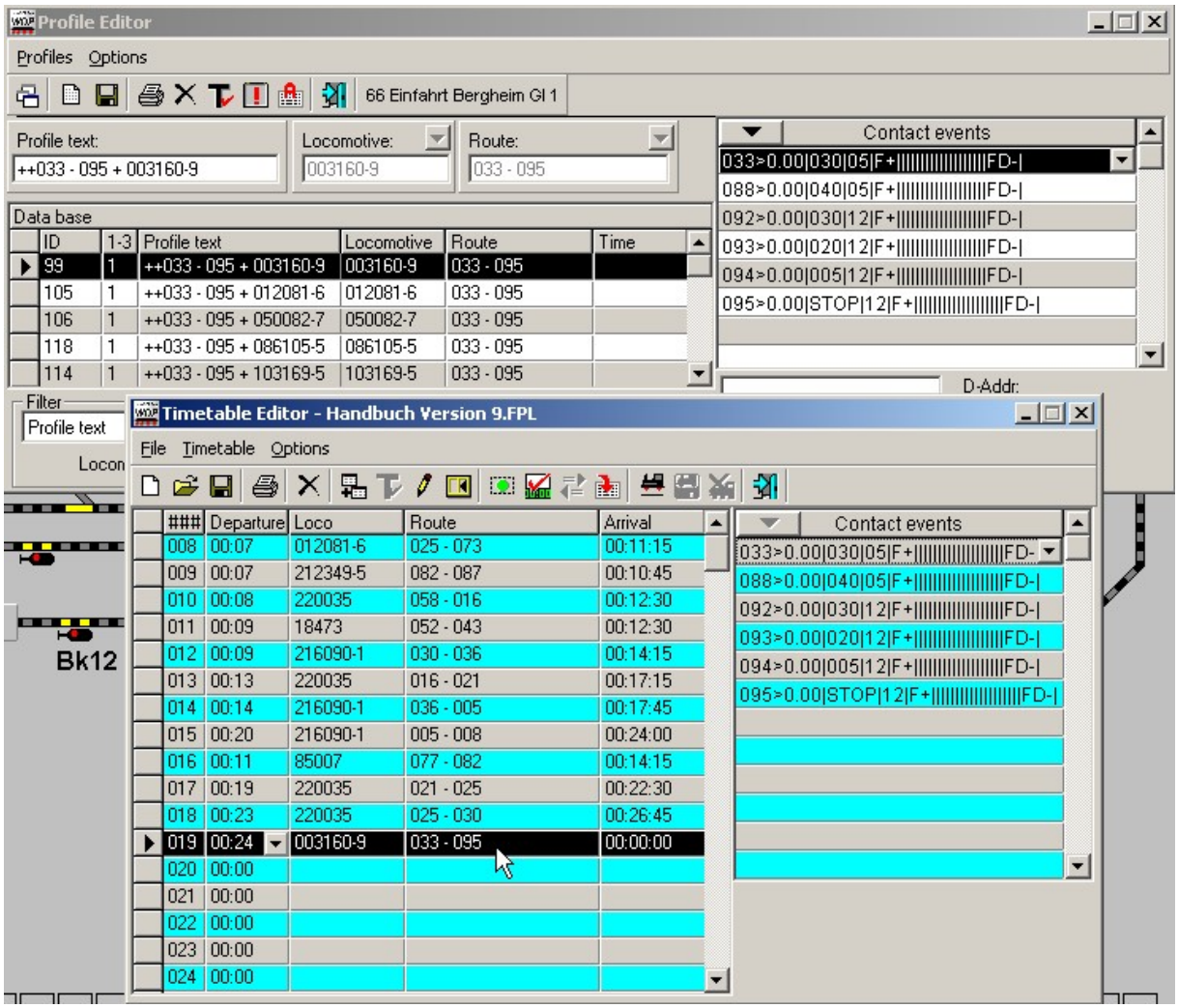
This export function helps you saving time when creating new timetables.

If you want to export profiles to the timetable-editor you have to select first a new or existing line in the timetable-editor and you have to select a departure time.

Attention!
If you select in the timetable an existing line this will be overwritten by the line from the profile editor; **WIN-DIGIPET 9.0 doesn't** insert automatically a new line.

After the selection of a timetable line, change to the profile editor and mark the profile line to be exported, open the context menu with the right mouse button and select the menu command Export to Timetable Editor.

This command will export the profile line to the timetable-editor as shown in the picture:



- The contact-events where copied 1:1.

You can also export timetable lines from the timetable-editor to the profile-editor, this is described in section **11.4**.

10.11 Profile-event-inspector

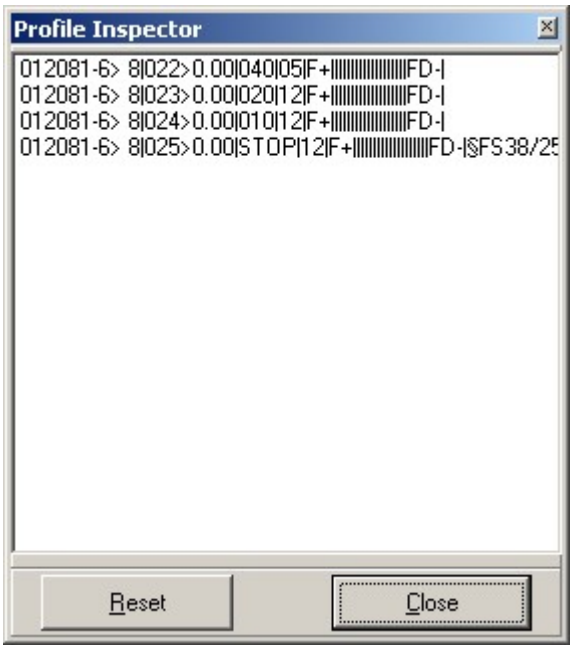
For testing profiles you can open the profile inspector at any time. This inspector helps you to supervise the treatment and execution of contact events.

The inspector can be opened with menu command <View> <Profile-event-inspector>.

The inspector lists the contact events of all currently active profiles.

If a contact event has been executed it will be deleted from the list.

If you see still contact events listed in the inspector while all routes have been finished, the profile has an error and should be checked.



Hint!
After the stop-command you will see after the characters „FD-|“ or „FD+|“ the „§“-character. After this character program internal characters are stored for the treatment of the stop command.

10.12 Leaving the profile editor

Select the menu command <Profiles> <Close> or click on the symbol  in the toolbar.

11 – TIMETABLE SYSTEM, TIMETABLE EDITOR

11.1 General

Through the **WIN-DIGIPET 9.0 Timetable System** a practically unlimited number of train and locomotive movements respectively can take place according to your instructions, the **timetables**.

Absolute perfection and total automation- through tedious programming by the user- are deliberately not aimed at. However, **WIN-DIGIPET 9.0** is apt to create operating conditions virtually in line with those ideal characteristics.

In the **WIN-DIGIPET 9.0** timetable system you can implement various levels of automation on your Digital layout and modify them as you like. It is for instance frequent practice to have train movements controlled by timetables whereas shunting engines are subject to manual control.

On the other hand, shunting operations can also be controlled by or integrated into timetables. There is a wide range of operational possibilities between these two examples.

It is remarkable how fast and easily **WIN-DIGIPET 9.0** timetables are created and how comfortably they are handled.

The system uses the data of your model railroad layout, recorded previously and combines them ingeniously. There, complicated and/or time-consuming preparations are not necessary.

Itineraries are recorded **routes**. WIN-DIGIPET rotes do not only switch their „own“ solenoid devices, but each route is, beyond that, capable to switch up to **15** solenoid devices (signals, simple and three-way turnouts (no crossings)) at any place of the model railroad layout. This is one of the advantages, which makes the operation according to WIN-DIGIPET timetables particularly flexible and attractive.

To ensure that **WIN-DIGIPET 9.0** can detect which points of your layout are just reached by trains/locomotives, you have to use feedback contacts connected to feedback modules s88. Routes begin at a **starting** contact and end at a **destination** contact. The relevant entries are entered in the route editor (see **8.7** to **8.10**).

In the WIN-DIGIPET timetable system you write the timetables in tabular form on the screen. One **line** of a timetable stands for the movement **of a train/locomotive** along an **itinerary determined** by a starting and destination contact. The train movement starts at a **time** you determine.

In addition to the starting and destination contact you can define up to **20** intermediary contacts and provide each of them with different actions e.g. speed changes, playing sounds, switching solenoid devices. Thus you can make each train movement an individual one.

The lines of a timetable are executed automatically one after another. In case of problems, delays or interruptions with timetables-events which happen on the model railroad layout (and in the real world)-, corrective measures for a quick return to normal operational conditions are available in WIN-**DIGIPET 9.0**.

In summary, the **WIN-DIGIPET 9.0 timetable system** controls the train movements **precisely** according to time **and itinerary**. Therefore, the stop sections at signals can be omitted/non –operational, in open, well accessible layout sections that are integrated into the operation with timetables. Such signals are only a visual feature.

11.2 Recording the first line in a timetable

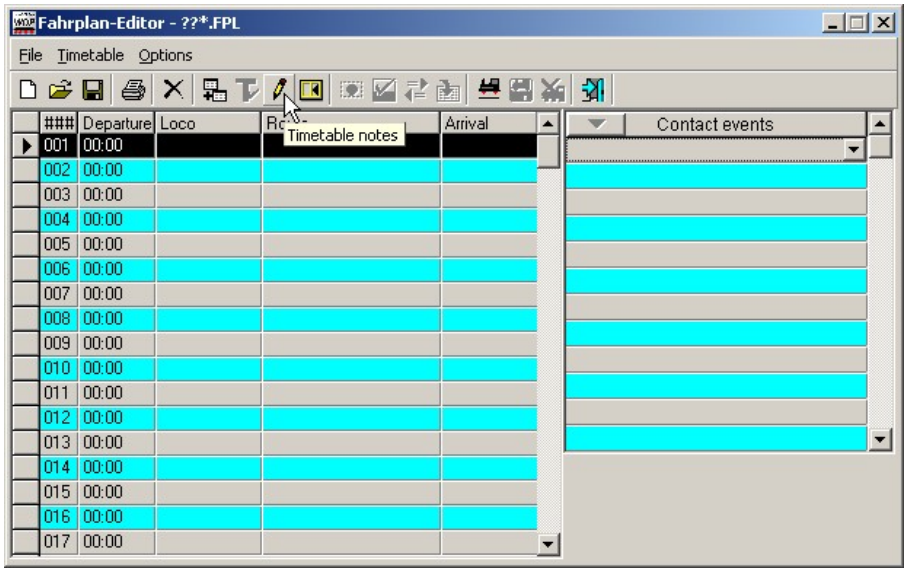
You can create an unlimited number of timetables. Each timetable can have up to **800** lines. You can set the maximum lines in the system settings (see **4.11.3**). Using the possibility to append another timetable (see **11.14**) you can even create a timetable with an unlimited number of lines.

Click in the main menu on the <File> <Timetable editor> or on the switch in the toolbar.

The list window of the timetable editor is displayed in the track diagram

As soon as you click at a line it will get black underlay.

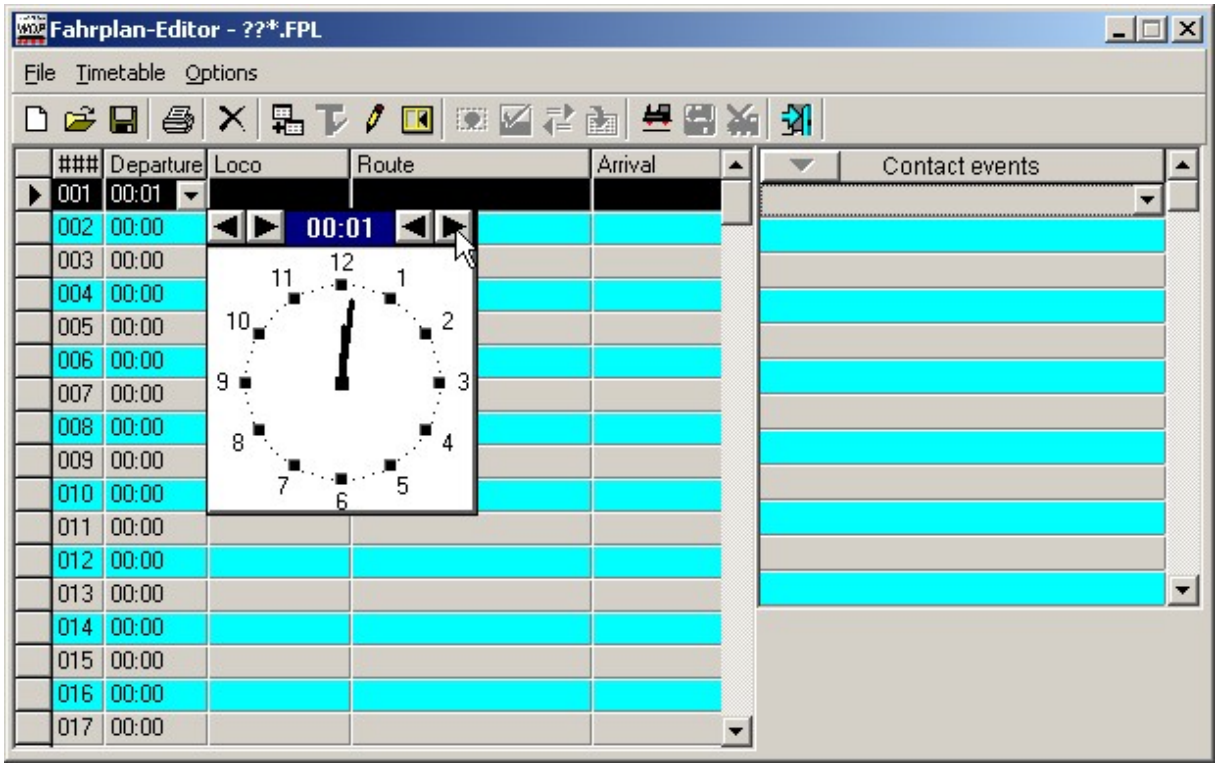
If you click at a column within a line, a selection panel with an arrow appears.



If you move the mouse over the symbols in the toolbar, tool tips appear for explanation of the symbols.

11.2.1 Time, locomotive, route, arrival time

In each line you have to enter data in the columns Time, Locomotive and Route, otherwise the line can't be executed.



The **first** column in the timetable **„###**" gives the consecutive number of the line.

In the **second** column **„Time"**, enter the starting time of the first train movement. Click on the time „00:00" and then on the selection arrow which appears. A clock to set the desired starting time appears.

Set the hour hand with the right mouse button and the minute hand with the left mouse button. You can also set the hours and minutes with clicks on the upper left hand/right hand arrows. The starting time set is displayed above the dial and in the second column in the timetable.

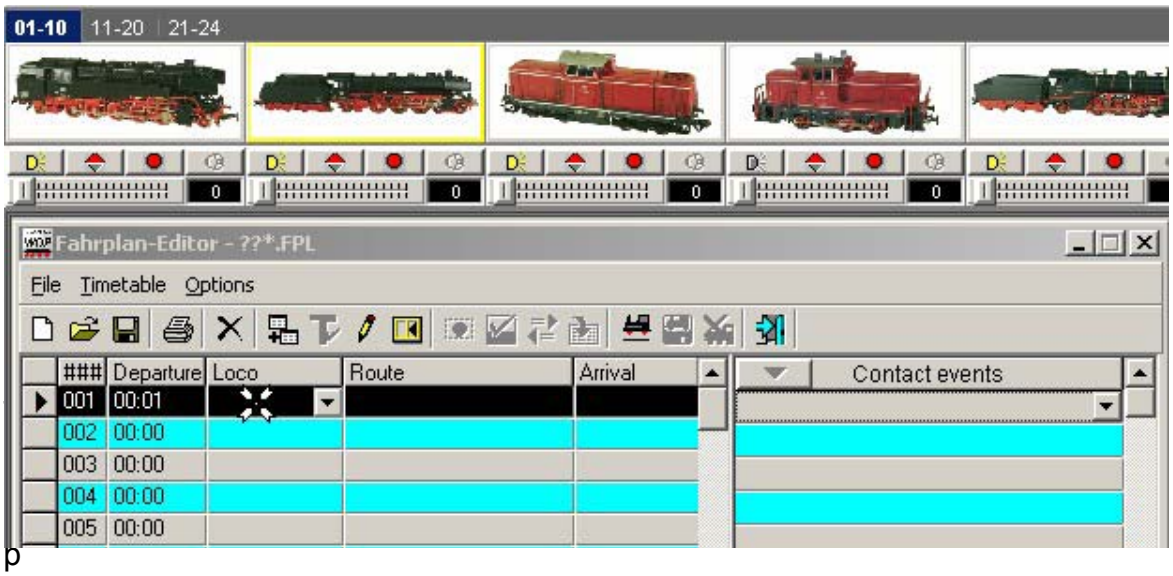
The time range extends from 00.00 hours to 23.59 hours. Timetables may not run through midnight, e.g. 22.10 hours to 03.44 hours is not permissible.

The „Model railroad clock" of a timetable starts running always **one minute prior** to the starting time of the relevant timetable. Therefore, if you want a timetable to begin at midnight, enter the starting time as 00.01hours- not 00.00 hours- in the first line.

Once you have set the starting time, click on the numbers in the second column of the timetable. The clock disappears.

When creating timetables, you have to two ways for entering data. The first method is the faster one.

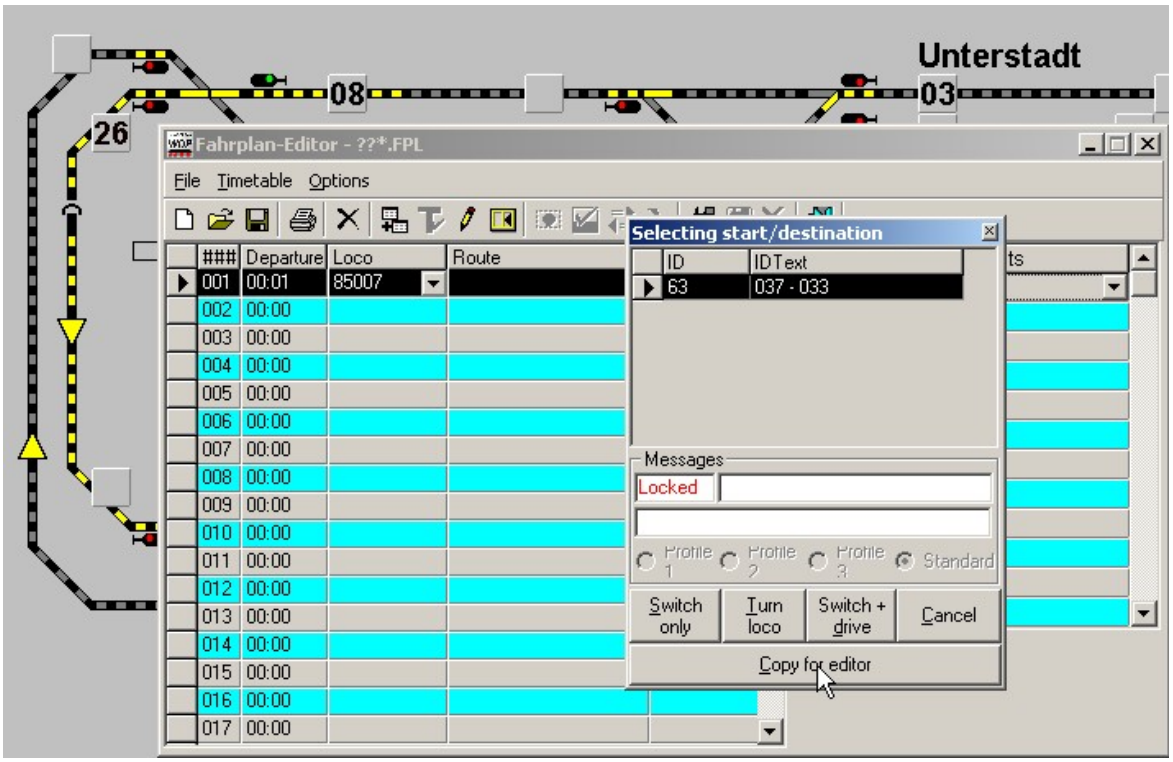
1. You can make **fast recordings** via the locomotive selection or the locomotive controls and the track diagram.



picture of the loco (locomotive selection or loco control), drag it, with the right mouse button depressed, into the column „*Loco*" in your timetable. Release the right mouse button. The picture on the loco is now displayed in the lower right corner of the editor.

The desired route is selected via the **start- and- destination function** (see **18.5.1***)*.

Select the current timetable line and execute the start- and destination function. Therefor click first on the start and second on the destination train number symbol of the desired route with the right mouse button.



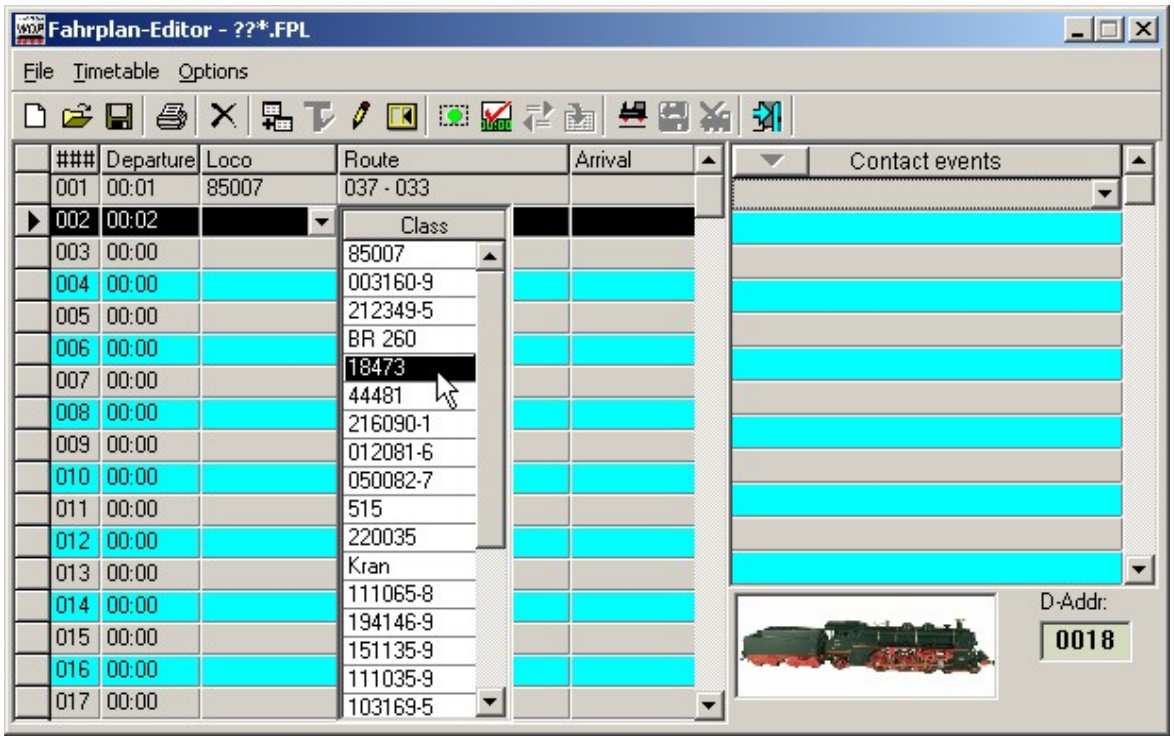
A window „Start/destination selection“ in a modified form appears. All routes that the system found are displayed with their ID texts and their internal ID number.

Through a click on its line in the list, select the desired route; it will light up in yellow in the track diagram.

Click on ***'Copy for editor'*** and then on the marked timetable line. This route will be automatically copied into the timetable line below „*Route*”.

2. Using the second possibility you enter the data via list fields.

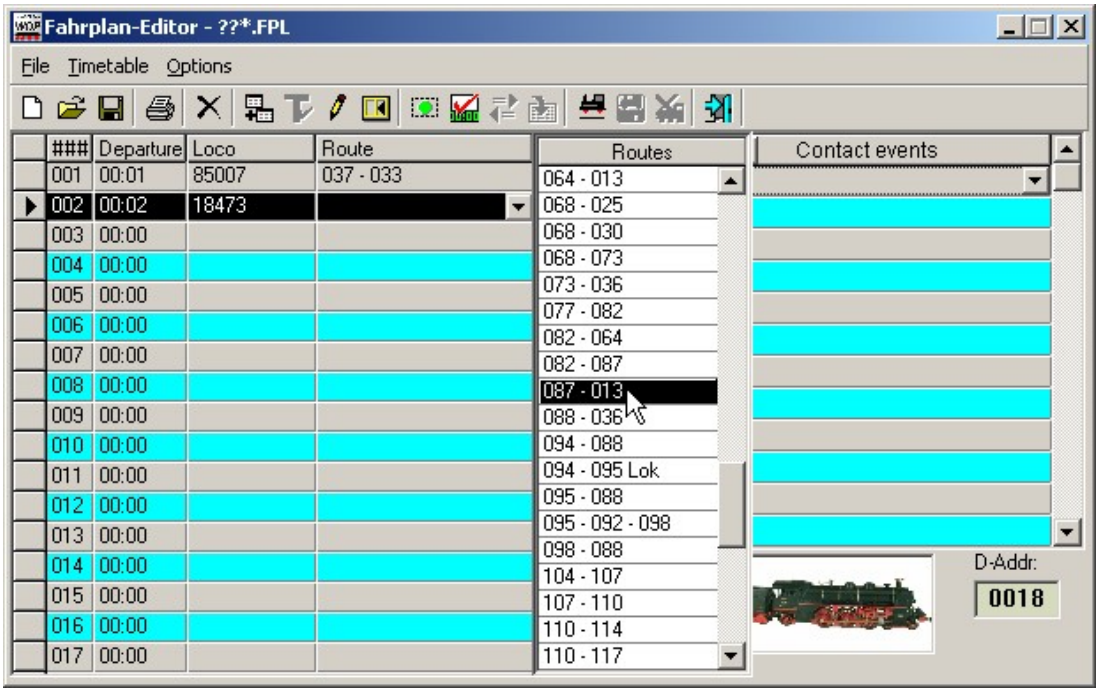
After setting the time click on the line below „*Loco*“ and the selection arrow appears. All locomotives to which you had assigned the category „*On layout*“(see **5.3**) are displayed with their class designations.



Click once on the class designation: Its picture appears at the bottom right. Double-click on the class designation: It appears in the third column of the timetable.

In the fourth column *„Route“* you enter the route to be switched for this train movement. Click at the line below *„Route“* and at the selection arrow appears. A list with the ID texts of all registered routes appears.

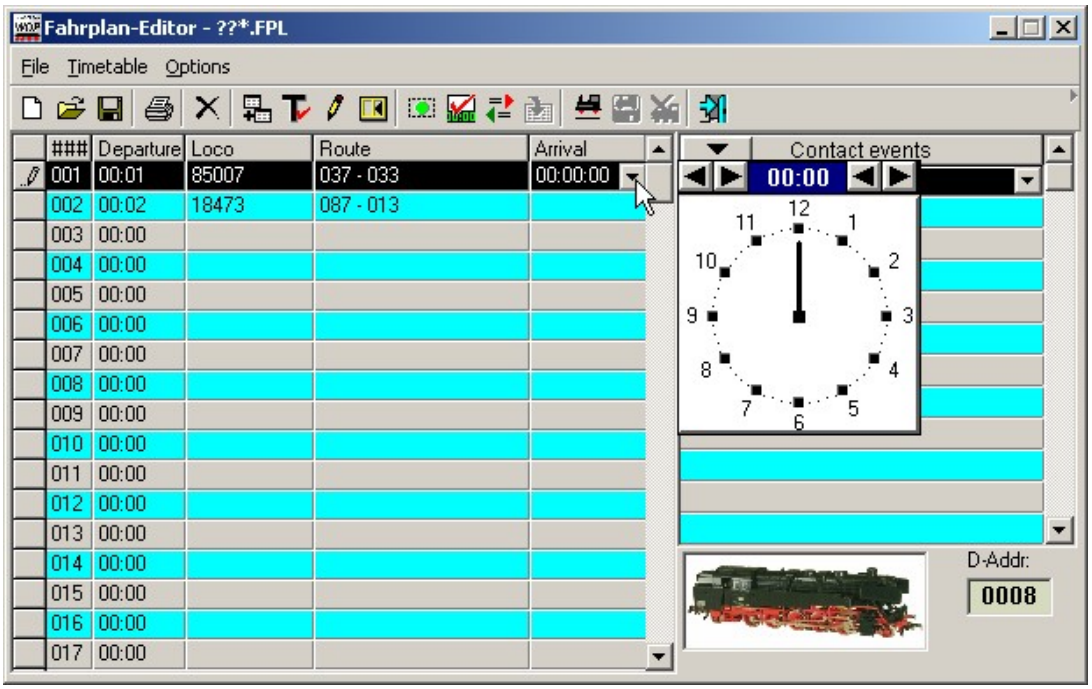
Click once on the route: The route is displayed in the track diagram.



If you selected the desired route, double-click on the selected route: It appears in the fourth column of the timetable.

The arrival time will be automatically allocated into this column *„Arrival“* after the timetable line has been tested and the arrival time is calculated (see **11.5** below). You can determine when the next departure of a train can be planned, using this function.

You can change the arrival time manually. Just click at the corresponding listing arrow of that column and a clock will appear, similar as for departure.



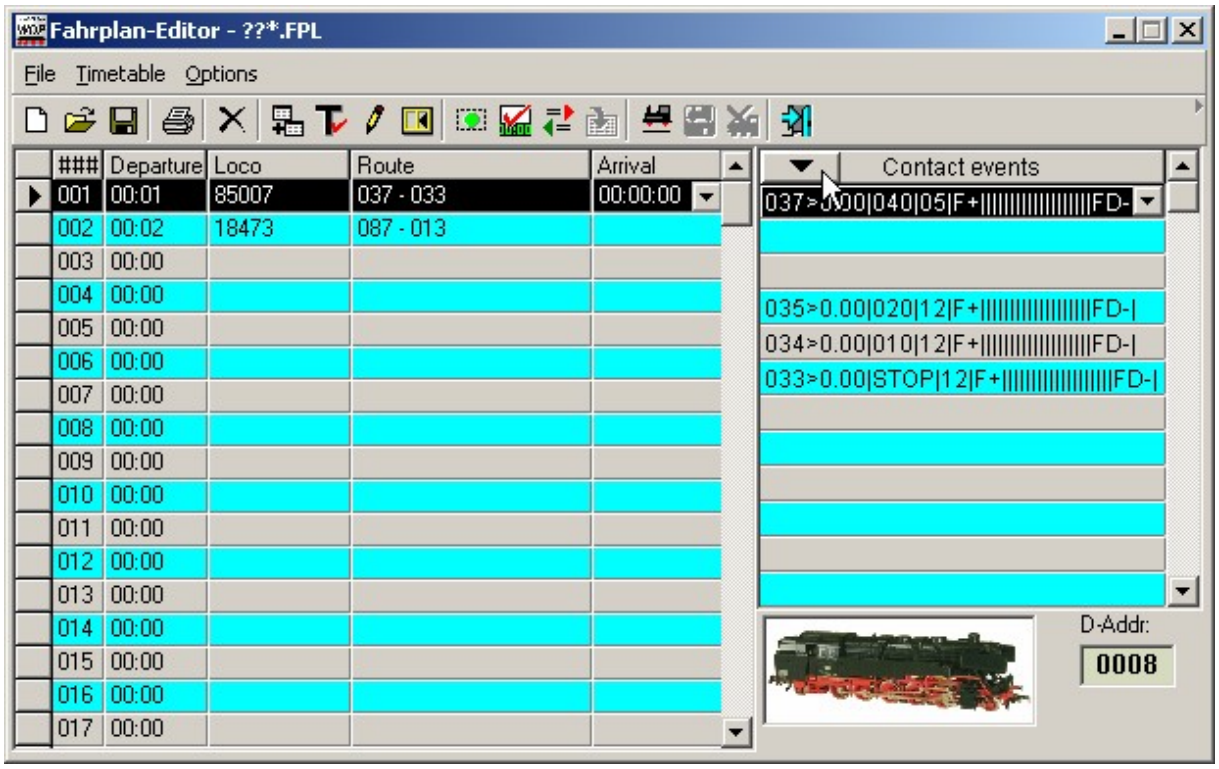
The timetable will still be operational, even though none or only some timetable lines are present and tested. The list window *„Arrival“* will be empty. All entries in the timetable must be correct, otherwise the timetable will not function.

11.2.2 Contact events

After registering of the route, time and locomotive the button Contact events is activated. If you click on this button **WIN-DIGIPET 9.0** automatically copies all speed events of the route (from the index card "Start/Brake/Destination" of the routes editor) to the contact events. They are automatically converted to absolute speed values for this locomotive.

Example:

- The start speed of the locomotive is **50**
- the start speed for this route at contact 037 is „**-10**"
- this results to an absolute speed of „**40**" for this contact event line
- this result to: „037>00.0|040|05|F+||||||||||||||||||FD-|"



This button was introduced to reduce your work, because already registered data is reused from the routes and locomotive database. From the locomotive database also the values for deceleration and acceleration are used.

When using this buttons, empty lines in the contact events don't cause any problems. These empty lines are a result of non-registered data for route contacts K1 and K2 and are deleted after saving.

Be careful!
When editing an existing timetable, pressing this button could cause a lost of data, because your already registered contacts are overwritten.

Above the contact events the ID-Number and the description of the selected route is shown. Underneath this window, the picture and digital address of the locomotive is shown.

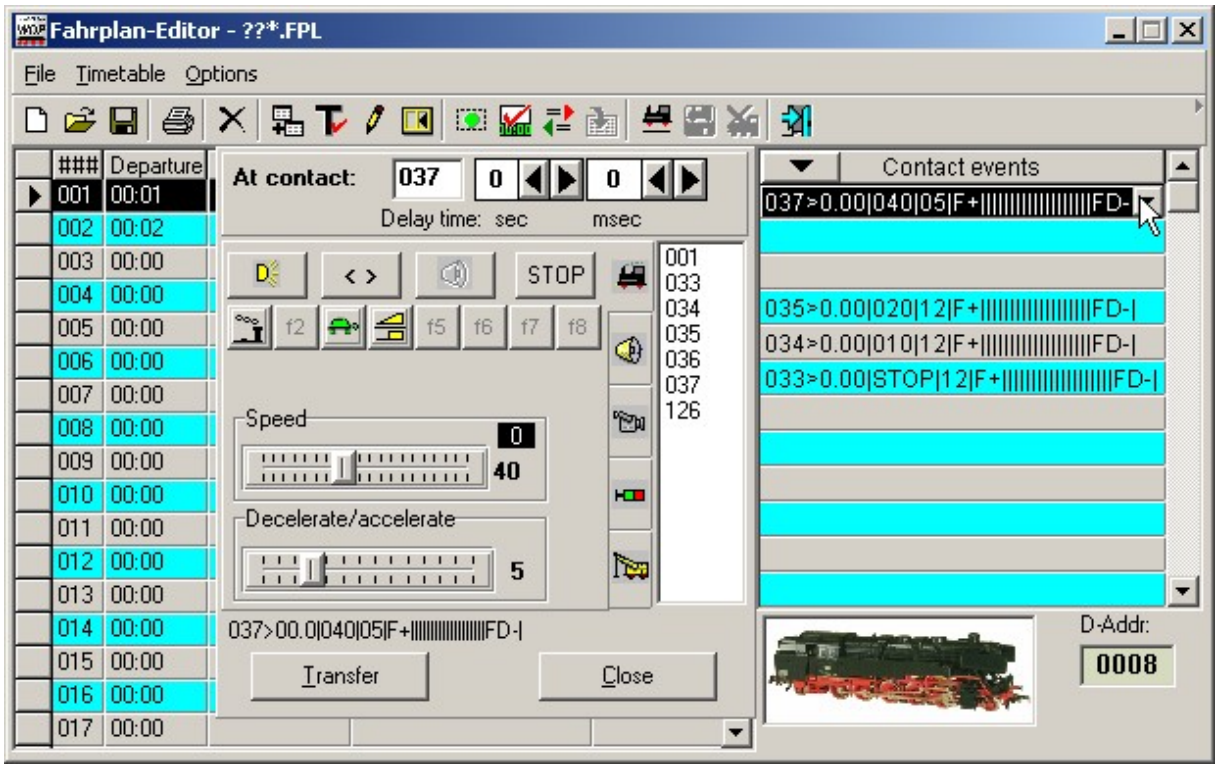
If you click at the picture of the locomotive, its Loco-control will open as described in chapter **5.14**.

If the automatically created contact events meet your wishes, you can continue with editing the next line of the timetable. Otherwise if you want to change or add contact events, click on the line under „Contact events“ and on the selection arrow which appears.

The window „At contact:“ appears. In this window you set which events should take place when a locomotive passes over certain contacts. Five different types of commands are available.

These are...

- Command to locomotives like speed changes, switch the light etc.
- playing sound-files
- playing video-files
- switching of solenoid devices
- activating crane commands



In the following table, all elements of the loco command line are described which will be displayed in the window “contact events”.

The detailed explanation of the following example is:

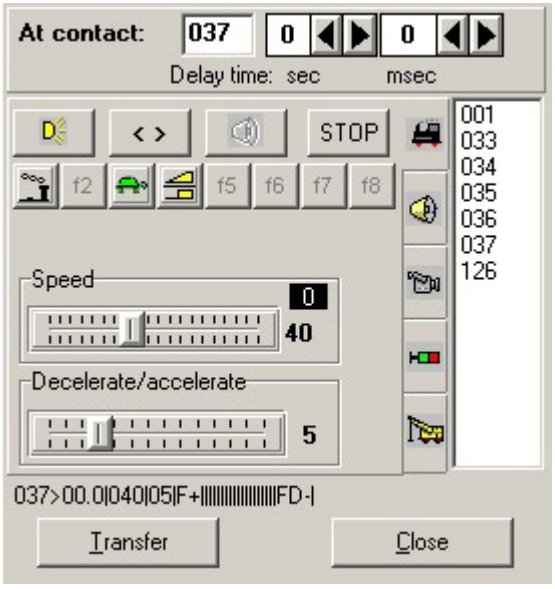
011 > 00.0 I 040 I 10 | F+ If1If2If3If4|f5|f6|f7|f8| S | 09 |f1|f2|f3|f4|f5|f6|f7||f8|FD+ |

011	=	Number of contact (three digits)
> und **|**	=	hyphens
00.0	=	Delay time 00. Seconds and 0 tenths of a second
040	=	Speed (in percentage - three digits – of the max. speed at this contact)
10	=	Delay factor (1 = slowly and 18 = fast)
STOP	=	Immediately stop, without consideration of a delay factor when the delay factor is 18, otherwise with consideration of the delay factor
<< >>	=	Change direction of locomotive
F+	=	Switch on locomotive function
F-	=	Switch off locomotive function, respectively keep function “Off”
MAG	=	Switch a solenoid device – e.g. followed by „S“ for signal, „W“ for single turnout or „D“ for a three way turnout, the other abbreviations of the solenoid devices are explained later; the designated numbers are codes, which are automatically assigned by the program.
WAV	=	WAVE-file < file name > activate
f1 ...f8	=	Special function f1 etc. = active
S	=	Locomotive-Sound „On“
09...	=	Functions decoder with address 09, as well as the indicated special functions f1 active etc..
FD+	=	Switch on function
FD-	=	Switch off function of the function decoder, respectively keep function “Off”

You can assign a “delay time” of max. 90 seconds to each contact (the command will be processed **after** the delay time). Each second is subdivided into 1000 milliseconds. To adjust, please use the two arrows next to the panels “sec” and “msec”. This feature offers a great variety for operation modes; these will be described later in the section “Use of delay time”.

11.2.3 Locomotive / running properties

Click at the “Locomotive symbol” in the window „At contact:“.



The command buttons are self explanatory, respectively are equipped with yellow marked “quick-infos” and are easy to understand.

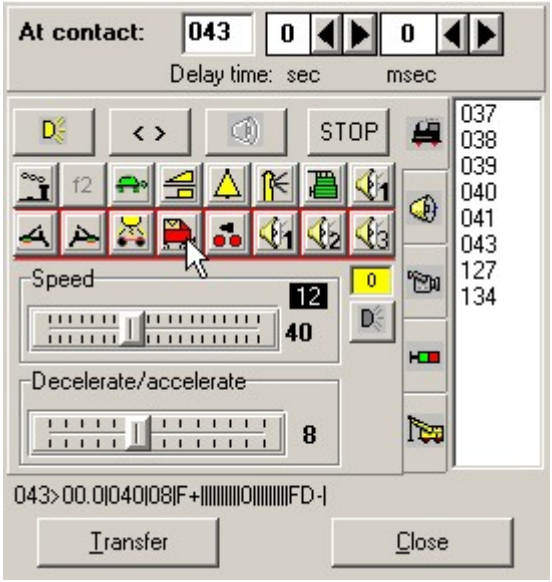
If the locomotive function **‘*func*’** is assigned to the “**Telex**”- coupler, then you normally decide to keep this function **“OFF”**, except for clearly defined shunting.

Changes of direction:
Some loco decoders are just able to switch to the opposite direction tenths of a second later, after the locomotive has stopped. Therefore practically, you use the command for changing directions for the same locomotive, in a separate command line of your timetable, one “model-railroad-minute” after the stop-command.

Loco sound:
You can play the sound which you have recorded for a specific locomotive (see locomotive-database, chapter **5.3.2**) directly in a timetable line. If you have not registered an individual sound for a locomotive, the panel at the right side of STOP will be blank. If a sound is assigned, a speaker-symbol will indicate, that a sound is registered to a timetable line. A grey-marked speaker-symbol indicates, a sound is not assigned for playback to that particular line.

Loco stop:
If you click on the button „**Stop**“ at the destination contact, the locomotive will be stopped immediately when the release condition is fulfilled (see **8.7.2**). For a slower deceleration you can even enter a delay (Value <18 and >0). In this case it is irrelevant if you entered the locomotive database “Immediate stop” or “Stop with delay” for this locomotive.

Using the pictogram-buttons f1 to f8 you can send special function commands to the locomotive e.g. switch on/off the smoke generator. The tool tips describe the several functions.



Furthermore you can use a functions decoder which is assigned to a locomotive (locomotive-database, chapter **5.6**) in a timetable line. If a functions decoder has been combined with a locomotive in the locomotive-database, a yellow marked panel will show the address in the second "f..."-line and right of it, the corresponding functions f1 to 8 are shown.

The driving behaviour of the locomotive can be adapted with the sliders "Speed" and "Decelerate/accelerate".

The sum of your settings will be shown in the bottom left as a loco command line, see this extensive command for example:

043>00.0|040|08|F+||||||||||0||||||||FD-|.

This means...

- **043** the number of the contact
- **>** hyphens
- **00.0** no delay (= no waiting time) at contact 043
- **040** the adjusted speed (40 % of max. rated speed)
- **08** is the adjusted acceleration/deceleration (1 to 18)
- **F+** Loco-function "ON", **||||||||||** = special functions f1 to f8 not activated
- **0** = function decoder with address 0 and f0 to f8 of function decoder not activated
- **FD-** = function-decoder-function "OFF".

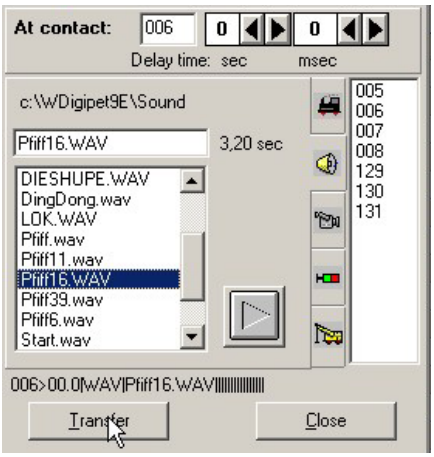
Click at '***Transfer***' and the locomotive-command line will be recorded in the frame "contact events" and automatically the next command line will be activated.

11.2.4 Playing sounds

If you want to play a sound in a timetable contact event line e.g. when contact 036 is occupied, you have to do the following. Select an empty line in the contact events and click on the selection arrow which appears. The window „At contact:" appears.

Click on the symbol  to open the index card „Sound".

All wave files in the subdirectory \SOUND of C:\WDIGIPET are displayed (see **3.6.1**).



In the list field at the right side all contacts of the actual route are listed. Select the desired contact by mouse click or you can enter it into the field beside of „*At contact:*“ by keyboard.

In our example click on 006 and the number is automatically displayed in the field beside of „*At contact*“.

Also select the sound file you want to play. The file name and playing time is automatically displayed above the file selection list field.

For testing purposes you can also play the sound file immediately by pressing the button .

At the bottom of the frame, the command line is displayed similar to a locomotive command line.

If you are satisfied with your selection, click on ‘***Transfer***’.

11.2.5 Video sequences

If you want to play a video in a timetable contact event line e.g. when contact 035 is occupied, you have to do the following. Select an empty line in the contact events and click on the selection arrow which appears. The window „At contact:“ appears.

Click on the symbol to open the index card „Video“.

All AVI files in the subdirectory \VIDEO of C:\WDIGIPET are displayed (see **3.6.1**).

The selection method for videos is the same as for sound files explained in section **11.2.4**.

For testing purposes you can also play the video file immediately by pressing the button . The video is played in an extra window.

At the bottom of the frame, the command line is displayed similar to a locomotive command line.

If you are satisfied with your selection, click on ‘***Transfer***’.

11.2.6 Switching solenoid/Changing the colour of the train number

With this function you can switch at a contact solenoid devices. Nearly all solenoid devices can be used **except** crossings. The handling of this function is similar to add-on switches in the routes editor (see **8.8**).

If you want to switch a solenoid device in a timetable contact event line e.g. when contact 017 is occupied, you have to do the following. Select an empty line in the contact events and click on the selection arrow which appears. The window „At contact:“ appears.

Click on the symbol  to open the index card „Solenoid device“.

In the list field at the right side all contacts of the actual route are listed. Select the desired contact by mouse click or you can enter it into the field beside of *„At contact:“* by keyboard.

In our example click on 017 and the number is automatically displayed in the field beside of *„At contact“.*

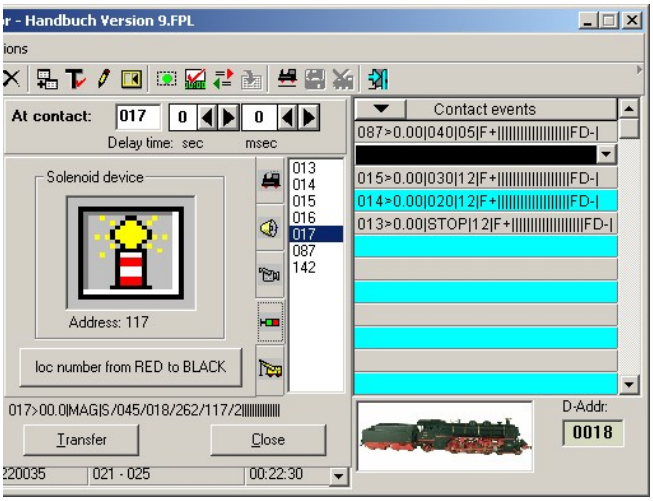
At the beginning of a new solenoid device registration the picture box below „Solenoid device“ is empty. Now drag the desired solenoid device via „drag & drop“ into the empty picture box.

Select the desired state of the solenoid by clicking on the picture of the device.

At the bottom of the frame, the command line is displayed similar to a locomotive command line.

If you are satisfied with your selection, click on ***'Transfer'***.

Attention!
Contact events for solenoid devices of older versions (before version 8.0) have to be corrected.



With this type of command you can switch also all kind of functions, which are switched with a k83/k84-decoder, and also a turntable or moving table (see **14.10**).

Loc number from RED to BLACK

On this index card you will also see the button loc number from RED to BLACK.

If you select this command for a contact event line, the locomotive number will be switched to black and this locomotive can be used again in the DC automatic or the tour automatic. This very useful to hand a locomotive over from the timetable to the mentioned automatics.

11.2.7 Executing crane macros

If you want to execute your recorded crane macros, click on the symbol to open the index card for controlling cranes is displayed.

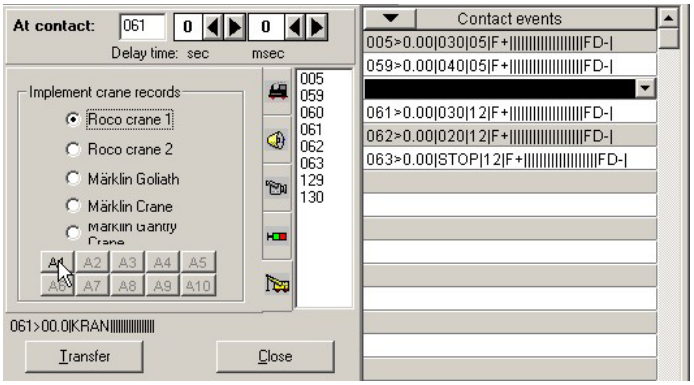
Select the contact and the crane macro you want to execute.

At the bottom of the frame, the command line is displayed similar to a locomotive command line.

If you are satisfied with your selection, click on '***Transfer***'.

This function is also interesting for you user, who even don't own a crane!"

The crane macros can be used for special actions with locomotives, that can be executed manually or by timetable after recording without using routes etc..



11.2.8 Use of “delay time”

The following examples will show you, how to use this feature easily for great variety of operations on your model railroad.

1. You would like to playback a typical announcement of a railway station at the same contact before the train leaves (“Attention at platform 6. The train will depart soon. Doors will close automatically”). The train shall depart, AFTER the sound has finished – this would be the right way.

   Therefore you have to register the following contact-events:

   ```
   Contact events
   021>02.0|WAV|Start.wav||||||||||||||||
   021>07.0|030|05|F+||||||||||||||||||FD-|
   ```

   Play a wave file at contact 21 2 seconds after switching the route and the signal and in the second line start to move the train with 30% of the max. rated speed and acceleration 5 at the same contact, but release this command **after** seconds and (>07.0).

   You have to check this delay time of course and may correct it manually referring to the length of the announcement you would like to use.

2. You don’t have a breaking contact before a stop contact for a specific track section, because you couldn’t install one (tunnel) or you wanted to save contacts.

   You can manage this track section with at least 2 contacts (start- and destination contact):

   ```
   094>00.0|020|08|F+||||||||||||||||||FD-|
   094>06.5|010|08|F+||||||||||||||||||FD-|
   095>00.0|STOP|18|F+||||||||||||||||||FD-|
   ```

   At contact 94, start the locomotive with 20% of the max. rated speed and an acceleration of 8.

   Also at contact 94, after 6 seconds and 500 milliseconds(>06.5), slow down the loco (this is a kind of virtual contact).

   Stop loco at contact 95.

3. You want a locomotive to depart, close a level crossing, slow down the train, and play a sound at the level crossing (bell, horn).

   This all can be programmed at the start contact.

   ```
   Contact events
   094>00.0|040|08|F+||||||||||||||||||FD-|
   094>02.5|MAG|S/030/018/256/110/2||||||||||||||
   094>03.2|035|08|F+||||||||||||||||||FD-|
   094>03.8|WAV|WHISTL.WAV||||||||||||||||
   095>00.0|MAG|S/030/018/256/110/1||||||||||||||||
   095>00.0|STOP|18|F+||||||||||||||||||FD-|
   ```

   This example assigns four commands simultaneously to contact 094:
   - Start loco with 40% of max. rated speed
   - switch a solenoid device after 2.5 seconds (close the level crossing)

- after further 3.2 seconds, slow down the loco back to 35% of the max. rated speed
- play a sound after further 3.8 seconds.

At contact 095...

- a solenoid device is switched (open the level crossing)
- the locomotive is stopped.

Remark!
You should use this example just as “expedient” and NOT to save feedback contacts.

As you can see, there are nearly no limitations to use this feature. Further possibilities would be, to schedule a planned stop of a train on a long route and after a break, the train should start riding again. Also it is easy to program to drive on a turntable and a reconstruction of a turntable with additional feedback contacts would not be necessary anymore.

On the other hand, for the example with the turntable there is still an insecure factor: “Warm” locomotives – which are in operation for quite a long time in this session – will have different running properties than “cold” locomotives”.

11.3 Recording of further timetable lines

Double-click on the second timetable line: it will be under laid with a black bar, and the starting time of the first timetable line plus one minute will appear. Thus, you have to adjust the time setting only slightly in order to enter the starting time of the second timetable line.

Create your timetable, proceeding line by line, as described above in **11.2**. With that, you can attribute the same starting time to several locomotives so that several train movements can begin simultaneously.

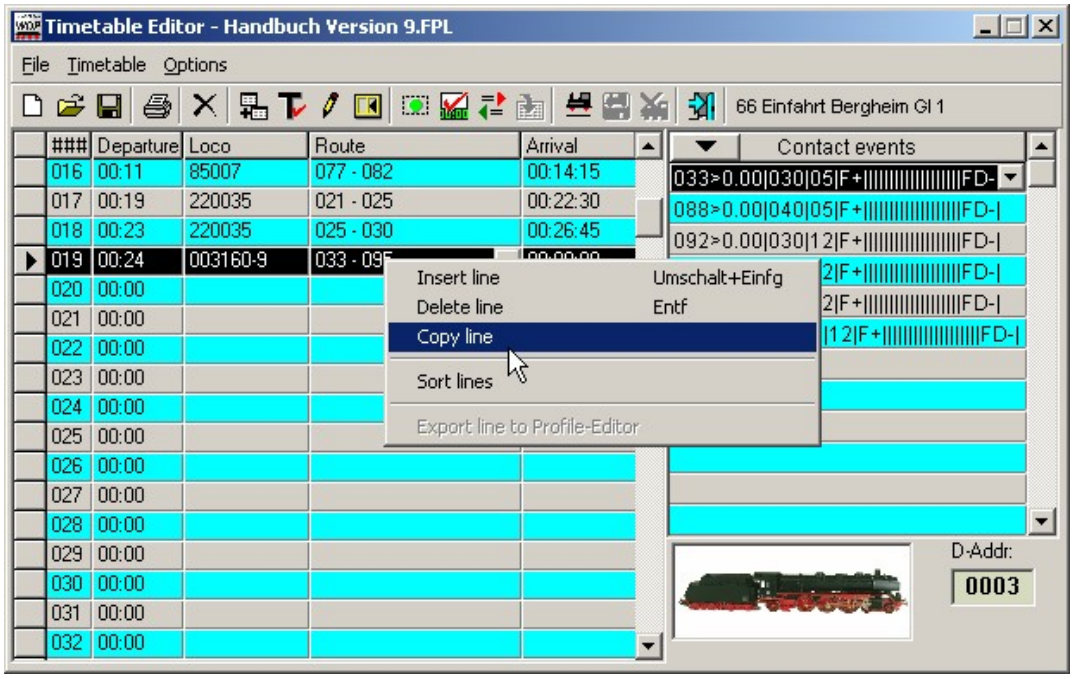
If a locomotive has to travel on two (or several) routes successively, you should allow for sufficient time prior to the timetable line with the next route. Testing your locomotives on your layout can help to find out the time interval required for proper sequential switching of several timetable lines.

11.4 Editing aids

For editing timetable lines in the timetable editor the desired line has to be marked. It will be under laid with a black bar and a click with the right mouse button opens a context menu with some commands.

If you marked a line in the column „Contact events“ and open the context menu with the right mouse button, you can choose between <Insert line> and <Delete line>.

If you open the context menu in the left part of the editor you can choose between additional commands.

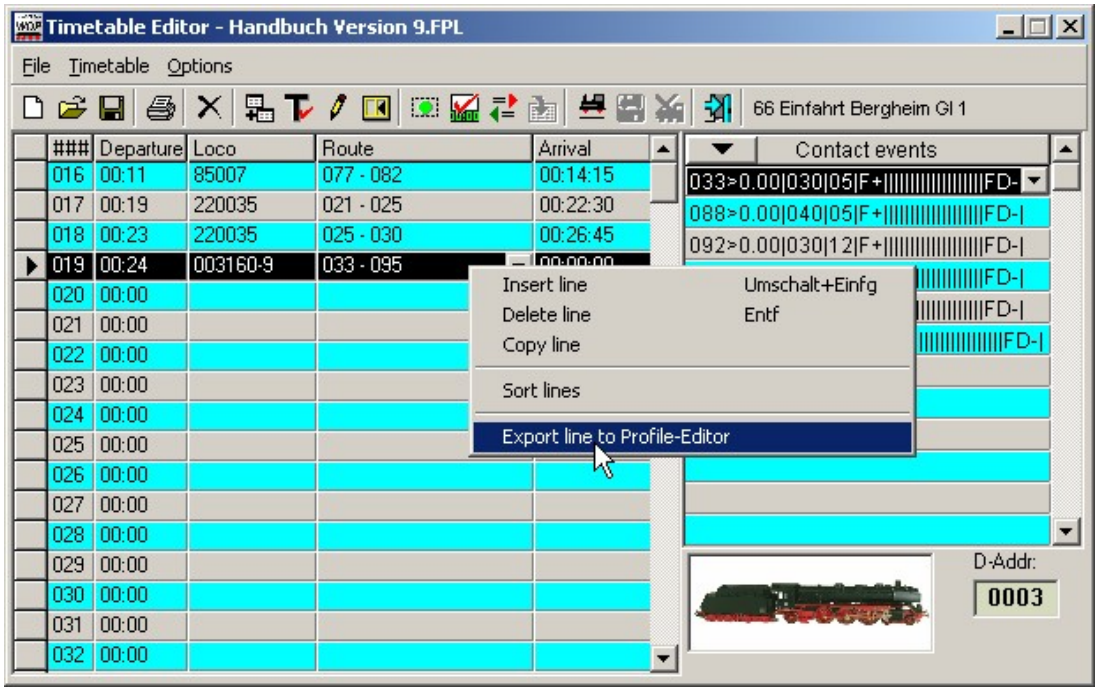


If you click on <Copy line> that line will be copied with a mouse click to a different place.

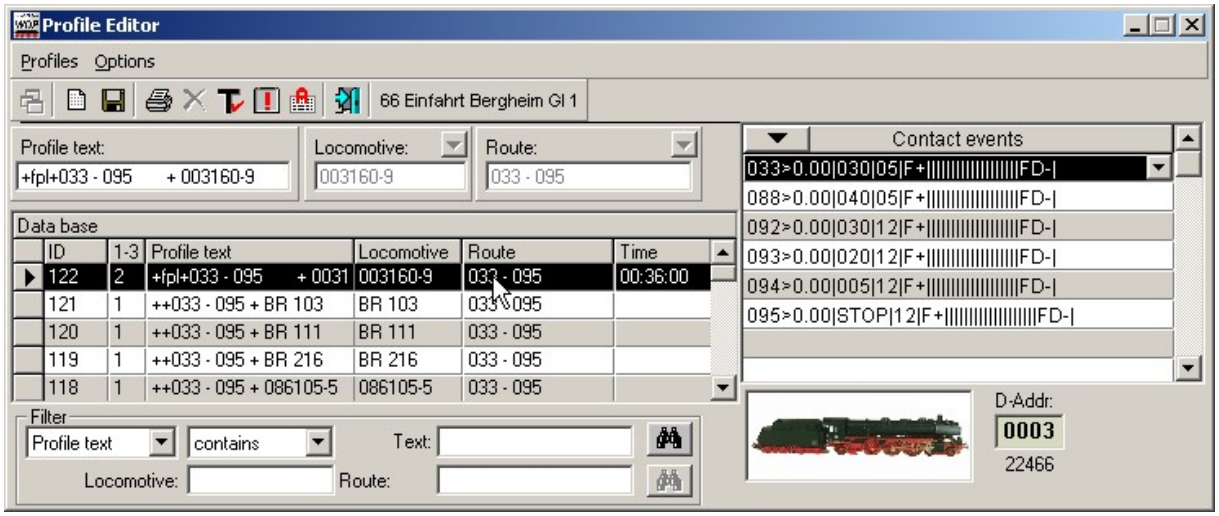
Important!
If you select an existing line the data of this line will be overwritten with the copied data and not inserted into a new line.

Timetable lines can be sorted by **departure time** (right mouse button and <Sort lines>). Therefore you can record an additional line at the end of the list and sort it afterwards.

The last command <Export line to Profile-editor> of the context menu offers the possibility to copy this timetable line to the profiles editor.



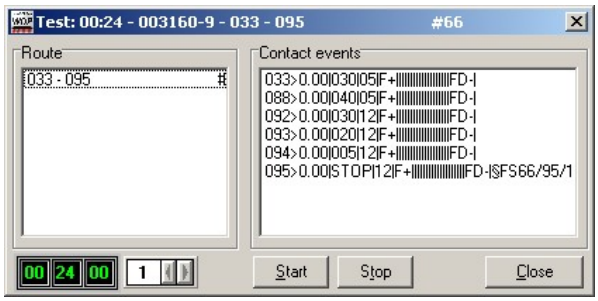
This is a very useful feature if you have many timetables. With this function you save a lot of time and work. This line is added to the profiles database with the prefix „+fpl“.



11.5 Testing timetable lines

Having made the entries „Time“, „Loco“, „Route“ and „Contact events”, you can test the route at once. Click in the menu ‘Timetable’ at ‘Test timetable line’ or click on the switch in the toolbar. A window „Test.“ will be opened.

On the left-hand side you see the switching conditions, on the right hand side the contact events of the route belonging to this timetable line. Further down, a digital clock with the starting time of this route appears. Next to it the time factor model railroad time/ real time is displayed which you had selected in the Basic System Settings (see **4.11.1**).



Please do not change the time factor whilst the timetable is running, as it can disturb the arrival times.

Put the relevant locomotive on the starting contact and press ***‘Start’***. The digital clock starts running, the switching conditions are checked, the route is switched, and the contact events are masked as soon as they have been executed (by the locomotive).

Caution!
If you get the message "**Loco not on starting contact** the relevant locomotive is not positioned on the starting contact or wrongly positioned.

Drag the correct locomotive from the locomotive selection onto the starting contact and repeat the test. The route will be switched if all conditions are met.

The clock stops when the destination contact has been reached and therefore the route release condition is fulfilled. This lets you determine how much time the timetable line took to complete. Use this to adjust the starting time of your following timetable line.

If you have **not** entered a release condition for a route for whatever reason – this would be a mistake – the clock will not start, if you click on “Start”; the route will not be released if the destination contact is reached. The destination contact must be entered always in the upper panel of the routes editor (see **8.7.2**) (supplementary marked with “dest. Contact).

This **arrival time** is **automatically** recorded in the **fifth column „Arrival**“ in the list window of the **Timetable editor** (see **11.2.1** above).

Note
The test window has to stay active during the test run, otherwise the arrival time is not recorded.

You can also use the simulation for testing timetable lines. But be careful, because the arrival time in the simulation will differ in most cases from the arrival time of the train on your model railroad layout. Therefor you should register the arrival time again with a real locomotive.

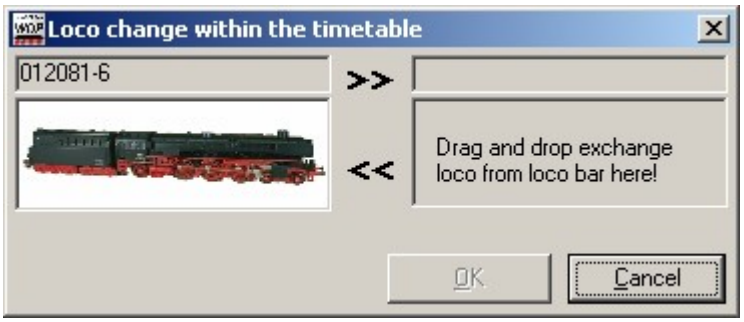
You will notice, that not all contact events are masked in the contact events window, if you made a mistake. You can make your corrections immediately.

The switch ***‘Stop’*** stops the locomotive during the test run, should an error occur.

You leave the test program with ***‘Cancel’***.

11.6 Automatic locomotive change in a timetable

In some cases it is useful to exchange on locomotive in a timetable by another. You do this manually in a very large timetable this isn’t very comfortable. **WIN-DIGIPET 9.0** offers a possibility for automatic changes of locomotive, which is much more comfortable.



Mark the relevant timetable line, within an existing timetable, and click in the menu <Options> on <Loco change> or on the switch in the toolbar, if you want to perform an automatic locomotive change.

A window opens. The locomotive **shown on the left** is the one to be changed**.**

Drag a locomotive to be changed from the locomotive selection bar, positioned by you at a screen edge, to the **right hand** picture field.

The left-hand side locomotive is changed to the right hand side locomotive throughout the entire timetable, if you click **'OK'**.

In the above example, all timetable lines containing the locomotive 012081-6 are overwritten by 220035.

Attention!
This function allows a quick change of locomotives in a timetable. However, please bear in mind, that each locomotive has different running characteristics You should therefore test the speed settings on the new locomotive if you are using contact events.

11.7 Display routes

If you want to look in the track diagram at a route described in a given timetable line, click on the line in the list window.

11.8 Timetable notes

If you click in the menu <Timetable> on <Timetable notes> or on the switch in the toolbar, a small input window opens. There you can insert your own notes about the timetable; they will be also displayed in the main program with the selection of the relevant timetable.

Maximum length of a note: 256 characters; the "CR" key cannot be used for line spacing.

You leave the „Note"-window, by clicking on a different line in the line window.

11.9 Name/re-name and save timetables

Having carried out all entries- and test, if any-, click on <File> and <Save> or on the switch in the toolbar.

If you created this timetable right now and haven't assigned a file name yet (??*.FPL), a window appears in which you assign a name to the timetable (max. **25** chars.); Click on 'OK', and this timetable will be saved.

Via <File> - <Open> you reach the window „Open" in which all timetables saved so far are displayed with their names.

If you want to rename a timetable, select it here, give a new name and save it with <Save as>.

11.10 Timetable test

When a timetable is tested, locomotives have to be moved by manual control, for example to travel back to the starting contact of the route. For this purpose you can call a loco control panel within the timetable editor.

Point the mouse pointer to the picture of the locomotive below the „Contact events“: The mouse pointer changes to a hand. Press the left mouse button- the big loco control with all control and display features appears at once (see picture in **5.14**).

11.11 Delete timetable

Using <File> <Delete> or the switch in the toolbar, you can delete a timetable from your Hard disk.

Prior to this, you will have to reply to confirmation check.

11.12 Print timetable

You can have the specific, active timetable printed out. For this purpose go to <File> - <Print> or via the switch in the toolbar, to the window „Print timetable“.

The window is the same as in routes list (see **8.15**).

The timetable will be printed line by line, including the starting positions of the locomotives and the notes to the timetable.

The starting positions can also be printed separately, using <Options> <Display starting positions> or the switch .

11.13 Creating a further timetable

Via <File> <New> or the switch in the toolbar, you can create a new timetable. The list window „?? *.FPL“ opens.

11.14 Appending a timetable

Via the menu <Timetable> <Append timetable> or the switch in the toolbar, you can enter in a loaded timetable, behind its last line, the name of another timetable, an add**-on timetable**. This means, a just finished timetable calls another timetable Instead of another timetable name you can enter the name of the just ended first timetable. It will repeat itself in a loop.

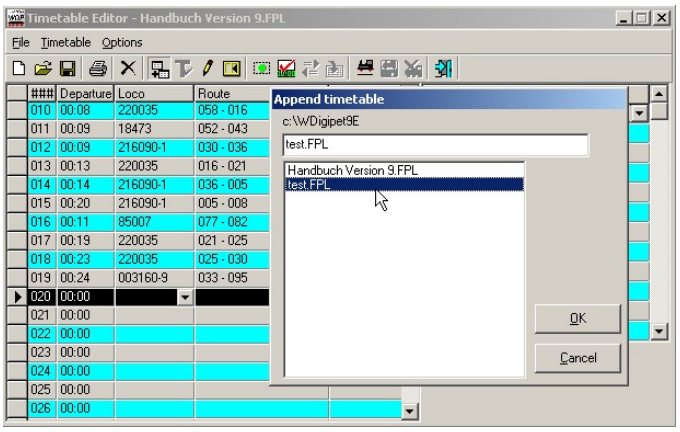
Click in the list window at the first empty line behind the last line of the loaded first timetable and enter a time.

Click on the menu <Timetable> <Append timetable> or click on the switch in the toolbar.

The window „ Append timetable “ appears.

On the left you see the names of all timetables recorded so far.

Click there at the name of the timetable you want to enter as add-on timetable, then on **'OK'**.



In the „Loco“ column of the activated first empty line of the first timetable an arrow **===>** appears and in the „Route“ column the name of the appended timetable is displayed.

11.15 Opening timetables

The **last created/modified** timetable is automatically opened when the timetable editor is started.

To open another timetable, use <File> <Open> or the switch in the toolbar. In the „Open“ window select the timetable you want to open, click **'OK'**- the selected timetable appears in its list window on the screen.

The last four timetables that were last active are displayed with their names under <File>. You can load them directly to the screen, bypassing the „Open“ window.

11.16 Check and correcting timetables

You reach this function via <Options> or the switch in the toolbar.

The window „Checks/correction timetables” appears. This function saves a lot of work if a digital address had been changed after the original entries.

To initiate the checking process, click on ***'Start'***.

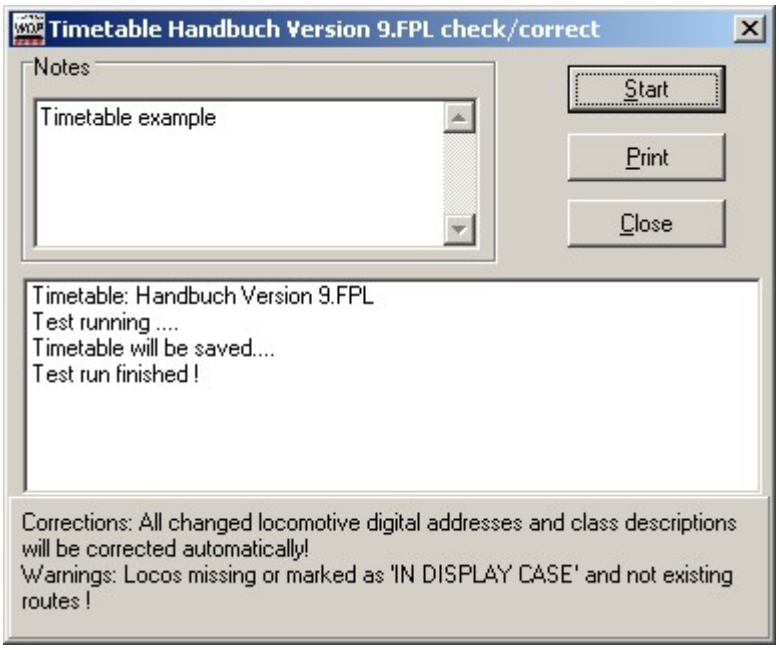
The results of the check will be displayed in the lower text window so that you can take the necessary actions.

Missing locomotives or „In display case“ (see **5.3.3**) are displayed as a warning, as well as deleted routes. Add-on timetables are checked as to whether they still exist or whether they were inadvertently deleted.

During the checking process the system **automatically corrects** subsequently changed digital addresses and class designations.

'*Print*' prints the checklist.

Through **'Cancel'** you leave this program part.



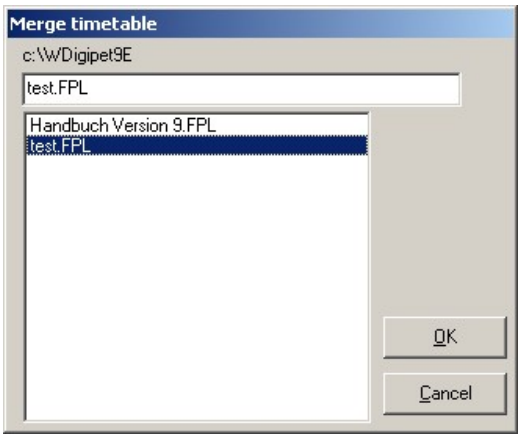
11.17 Merge timetables

Existing timetables can be merged to the current timetable.

At the toolbar, click at the button or the menu <Timetable> <Merge timetable>.

The window “Merge timetable” opens and lists all registered timetables by name. Select the timetable you'd like to merge via a click on its name and confirm with **'*OK*'**.

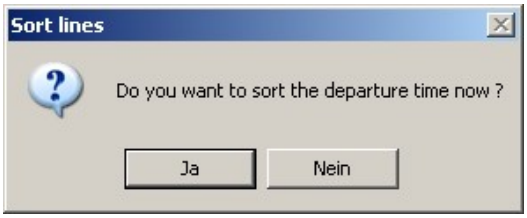
After you have confirmed with **'*OK*'**, a security message will occur:



The merged timetable will be inserted at the end of the current timetable, in the first empty line after the last line of the actual timetable.

An additional request occurs.

If you confirm with **'*JA*'** (JA = YES), the selected timetable will immediately be merged and sorted by departure times to the current timetable.



If you reply with ***'Nein'*** (NEIN = NO), you are able to sort by departure time later on (right mouse click).

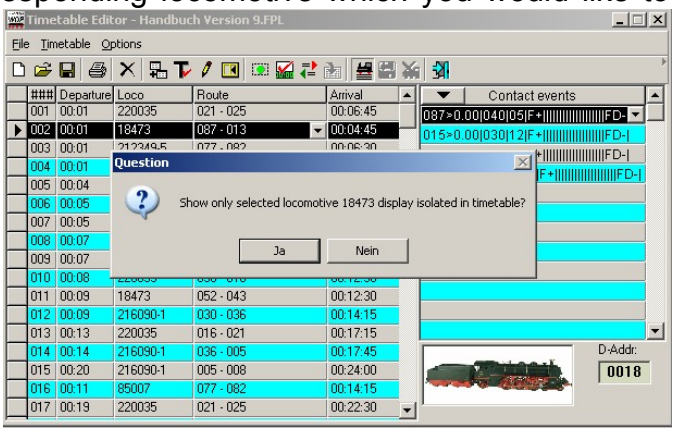
This feature makes it easy to register lines of existing timetables to an overall timetable. This feature also enables you to merge isolated loco-timetables out of existing timetables.

Attention!
The departure times have to be corrected manually after merging.

11.18 Display of isolated locomotives in the timetable editor

This feature allows you to isolate and show specific locomotives in long timetables, to control or to test each line via the timetable line test.

Therefore click on a line with the corresponding locomotive which you would like to isolate and then click at the button .

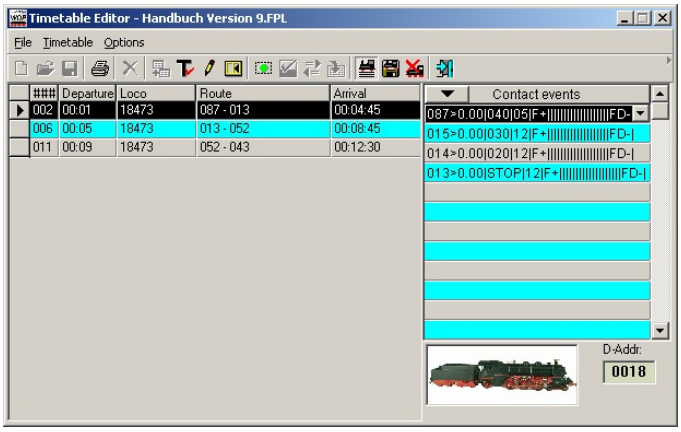


A security message will occur:

After you have confirmed with ***'JA'***, this specific loco will be isolated out of the timetable and just the lines with this loco will be shown.

You can **NOT** change the locomotive, but the "routes", "departure-" and "arrival times" and "contact events".

To show the complete timetable again, just click again at the button .



You can also save an isolated locomotive as a separate and new timetable.

This locomotive could be merged to other timetable later on.

Of course you have to correct the departure times again.

The button (next to) is **available only**, if a loco is isolated within a timetable.

If you want to save the currently visible isolated locomotive, as a separate timetable, just click at this button .

11.19 Miscellaneous options

You can access further functions via <Options>.

- **Display starting position** : The contacts on which the locomotives should be placed within a timetable are displayed in this window. This function is inactive as long as no timetable is loaded.
- Always display feedback contacts: Always display FB numbers
  (see **7.4**)
  Check this switch to display all feedback contacts in the track diagram at **every** start of the timetable editor.
- **Display solenoid device addresses:** Display solenoid devices addresses
  (see **7.2**)
  A check on this switch displays all recorded solenoid device addresses. These numbers/addresses are sometimes difficult to read in the track diagram. As soon as you point and hold the left mouse button pressed at the number/addresses, they will be enlarged (zoom function).
- **Export timetable to profile editor**
  With this menu command or with a click on the symbol in the toolbar you can copy your complete timetable to the profile editor. With this function you can save a lot time in the same way as with the copy method for single timetable lines in section **11.2.2**.

11.20 Operating timetables

The **WIN-DIGIPET 9.0**timetable system lets you comfortably operate the model railroad layout within **WIN-DIGIPET 9.0**. Details are covered in **18.15**.

All solenoid devices will be updated by **WIN-DIGIPET 9.0**, after you have quit the timetable editor. This ensures, that the correct setting will be shown after you have tested single timetable lines.

11.21 Practical hints on timetable operation

The **WIN-DIGIPET 9.0 Timetable System** translates essential characteristics of time and dimensions into the model railroading scale. Here are a few proposals for prototypical operation methods.

- Running properties of locomotives do vary „by nature“ from model to model. Those properties depend upon the commands you attributed to the feedback contact in the timetable editor, but they are also conditioned by the maximum and minimum rated speeds you had assigned to your locomotives in the locomotive database.
- In operation with timetables, however, all **main line** locomotives should feature about equal running properties. If it is not like that, adjustments in the locomotive database are advisable, preferably following simple tests.
- Speeds assigned to the feedback contacts in the timetable editor should be such that each main line locomotive runs on your layout at normal railroad speed as required by the given train category – **they should not speed along**.
- For locomotives with regulated decoders, one starting and destination contact with the appropriate entries is sufficient per route.
  A safe, yet sudden halt at the destination contact is ensured by entering „STOP|18|“. If you want a gradual slow down to stop, you should install a deceleration contact in front of the destination contact.
- Conventional locomotives not equipped with the regulated decoders may, as well known, display extremely different running characteristics on rising and falling gradients. Quite often, one has to re-adjust train speeds manually. You should consider installing speed-adjusting contacts on inclined track sections for operation according to timetables with such locomotives. A safe halt at the destination contacts is ensured through „STOP|18|“ with conventional locomotives too.
- It is suggested that you allow sufficient time for execution of each route and for pauses, when writing a timetable. Constant train movements are also not realistic on the real railway network- so, why should it be on the model railroad?

Documentation of your routes, either in hand-written form or as a printout, will ease entering data into your timetables.

11.22 Leaving the timetable editor

Via <File> <Close> or the symbol in the toolbar you can leave the timetable editor.

All solenoid devices will be updated by **WIN-DIGIPET 9.0**, after you have quit the timetable editor. This ensures, that the correct setting will be shown after you have tested single timetable lines.

12 – DEMAND CONTACTS EDITOR

12.1 System and functions

The **WIN-DIGIPET 9.0 demand contact system** enables you to run your trains automatically on your layout, as an alternative to the **WIN-DIGIPET 9.0 timetable system**, but with different functions to the timetable operation.
A demand contact is a feedback contact (= a contact track area) in WIN-DIGIPET 9.0. The defined feedback contact will operate the routes, defined by you, as soon as the locomotive passes over it. Each demand contact can have up to **20** routes, which are activated by the contact.

The best way to assign the routes or tour to the demand contact is to write a routes list on the screen. This list (and contacts) is accessed sequentially, once the demand contact has been operated, starting at the top of the list and ending at the bottom.

A route or tour, which does not meet the release or set conditions in the list of **demand routes** is skipped without execution and the next route or tour in the list is checked/executed. The complete list is examined that way.

The appropriate route is executed, if the set and release conditions of that route are met. No further routes are switched.

WIN-DIGIPET 9.0 demand contact system enables you to control very easily hidden yards, block systems, automatic empty track search and other automatic processes.

All other feedback contacts that do not control routes are used to signalise occupied tracks.

You can use the “Automatic with demand contacts” – which indeed is an order of routes - **without isolated track sections**, if your locomotives will be controlled by train numbers. This means all locomotive movements are controlled from start- to the destination contact of specific routes and all corresponding contacts in between.

Isolated track sections are not needed as usual in **WIN-DIGIPET 9.0**. For details have a look at chapter **18.5.1** – switch routes by Switch + Ride -function – especially switch-alternative **B**.

You can also switch this automatic to random modes, which will arrange events really versatile on your model railroad.

- Random contacts
  The contacts for checking are selected randomly and not one after the other.
- Random for routes
  The list of demanded routes will not be operated line by line, but the demanded routes will be operated randomised and will be switched not before the switch conditions are true.

The random modes are switched on and off in the main program, see **18.16**. A simple example with and without random mode can be find later on in the section **12.16**.

To check the automatic operations, an “Inspector” is for your disposal, which gives you a good overview about all troubles during automatic operations by listing numerous kinds of messages, to enable you to fix the problems.

Details are described in sections **18.16.3** and **18.17.4** of this.

Different, compared to the timetable operations, which demands all locomotives to be at their specific and correct start contact, the automatic with demand contacts makes it possible to show visitors automatic model railroad operations really quick – independent to specific start contacts.

In case of an accident this automatic mode makes it possible to pick up a locomotive from the model railroad and exchange it by another.

In this case proceed as follows...

- stop automatic mode
- pick up the (crashed) locomotive from the track
- place another locomotive elsewhere at a demand contact (start contact)
- register the digital address via drag and drop to the train number display (see **18.11.1**)
- switch on again the temporary stopped automatic mode.

The exchanged (or new) locomotive will be integrated in the automatic operations directly.

12.2 Planning and precautions

It is advisable to write all the inputs for the demand contacts down before you start with the recording. It is also important to observe the set/release conditions of the routes, which you have set in the track diagram editor and allocated to the demand contacts.

It is possible that you may have to record some additional routes, including the set/release conditions, for this automatic mode.

Important hints!

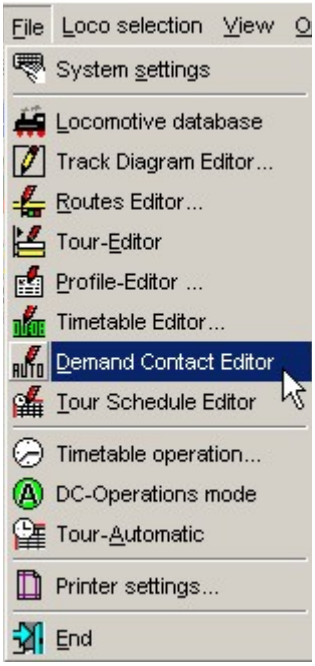
The structure of the AK-files has completely changed since **Version 8.5**. When opening older AK-files for the first time, they will be automatically converted.

Of course these new AK-files are not downwardly compatible and can’t be used in older versions any longer.

TIP!
Before starting the automatic operation with demand contacts, reset all solenoid devices (see **18.4**). This will eliminate malfunctions of the automatic, which could occur, if the position of one or another solenoid device was changed manually.

12.3 Recording

Click in the menu bar on <File> and then on <Demand contact editor> or on the switch in the toolbar.



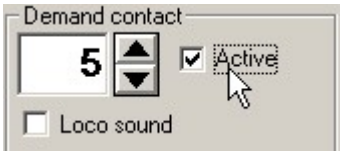
If you open the demand contact editor for the first a window with the title „Demand contact editor – AK.DAT“ opens.

You should always use a meaningful file name for your AK-files.

All AK-files have to begin with „**AK**“ e.g. „AK_MainStation.DAT“ for operating your main station.

12.3.1 Demand contact and automatics section

Select a demand contact in the top left-hand corner.

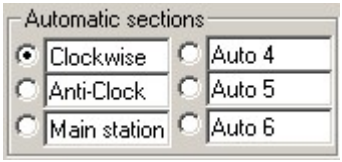


The number is automatically limited by the number of feedback decoders, recorded in „System settings“ under „Digital system“ (see **4.1.4**).

Also check „*Active*“, otherwise the contact will be unaccounted for the automatic with demand contacts. This option is very useful, because with this checkbox you can also disable this contact with deleting it.

Up to six different sections can be allocated to demand contacts thus dividing the automatic operation into four groups. These can be switched either on or off. These sections are named „*Auto 1*“ to „*Auto 6*“ by default.

This is useful for certain big operational sections such as main station, hidden yard1, hidden yard2, etc.

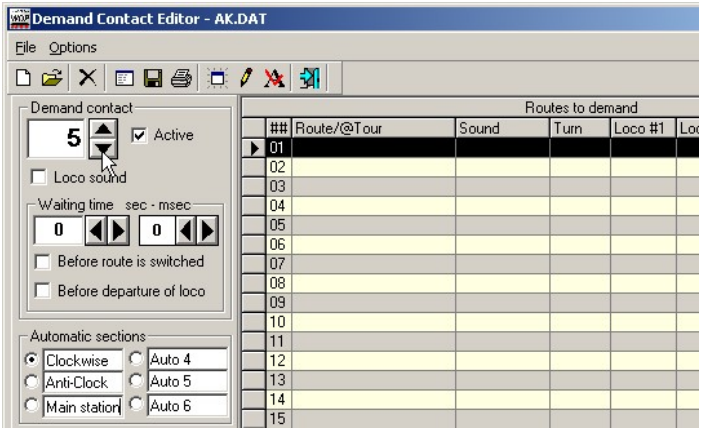


Because of this you should give the automatic sections also meaningful names e.g. change „*Auto 1*“ to „*Clockwise*“, „*Auto 2*“ to „*Anti-Clock*“ and „*Auto 3*“ to „*Main station*“.

Select the section that should be operated in automatic mode to its corresponding demand contact. This selection is also displayed when the contact has been re-selected (overwrite its number in the top left hand with the new one).

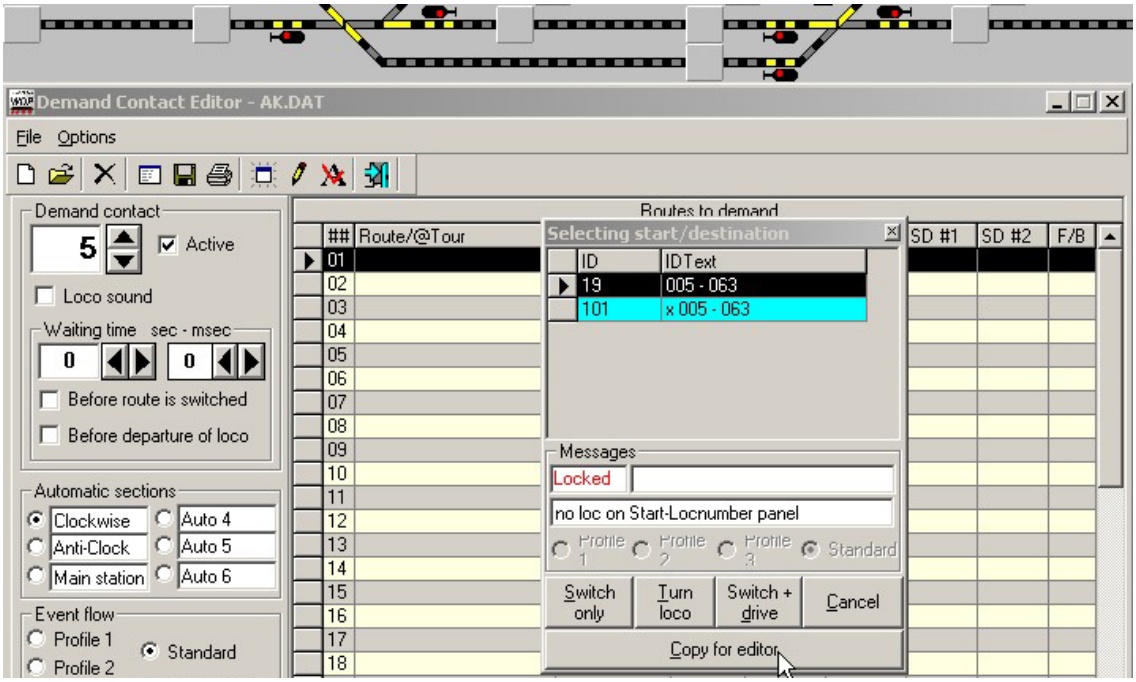
12.3.2 Registering routes in the demand contacts list

In the demand contacts editor you see on the right side a list with 60 rows (up to **60** routes or tours are possible per demand contact). This list contains the routes/tours, sounds and direction change commands you want to assign with this demand contact.



The order of the rows from top to bottom is important, because the routes/tours are checked in this order.

With a left mouse click select the line in the „Demand routes“ list, where a route should be entered.



The best possibility to select and record a route is the selection via **Start/destination function** (see **18.5.1***)*.

Click with the right mouse button on the start and then on the destination contact of that route in the track diagram.

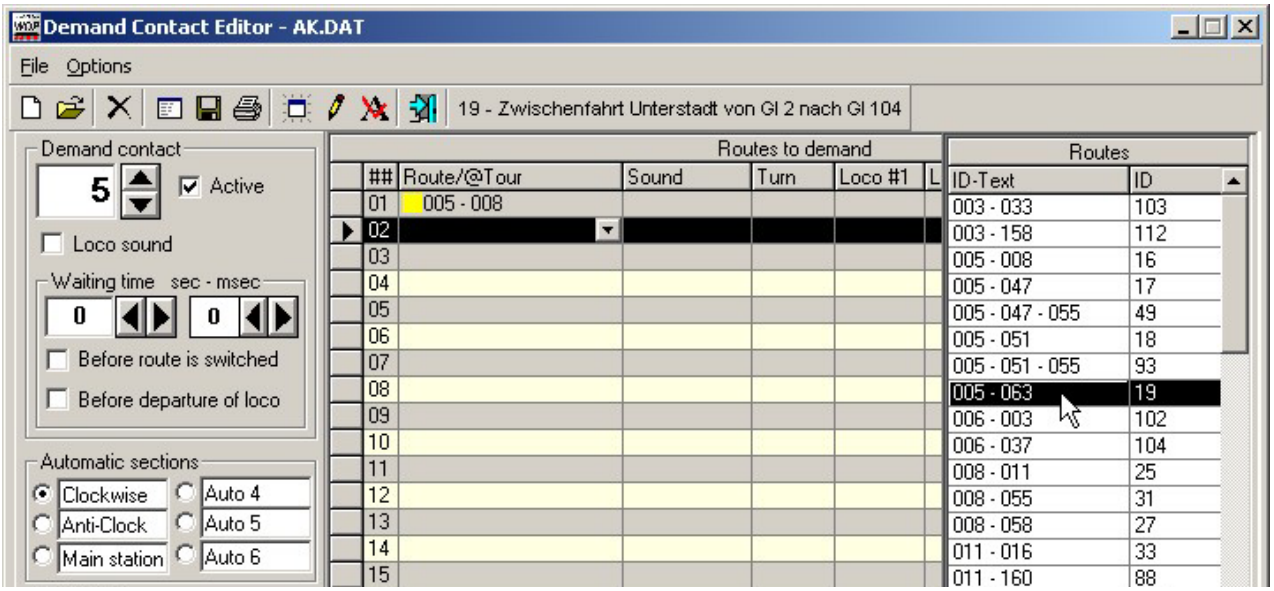
A window „Start/destination selection“ appears. A list of all routes with their ID text and internal ID number, found by the system, are displayed.

Select the route from the list with a click; it appears in the track diagram with a yellow background. Click on ***‘Copy for editor’*** and then on the marked list line. This route is automatically copied to the line under *„Route/@Tour“*.

Another possibility to select and record a route is the following.

With a left mouse click select the line in the „Demand routes“ list, where a route should be entered.

A selection arrow appears in the column *„Route/@Tour”*; click on it and a list of all routes opens. If you place the mouse of the route list, the description text of the route is displayed as tool tip.



The selected route in this list is marked in the track diagram in yellow.

Double click on the required route- it appears in that line.

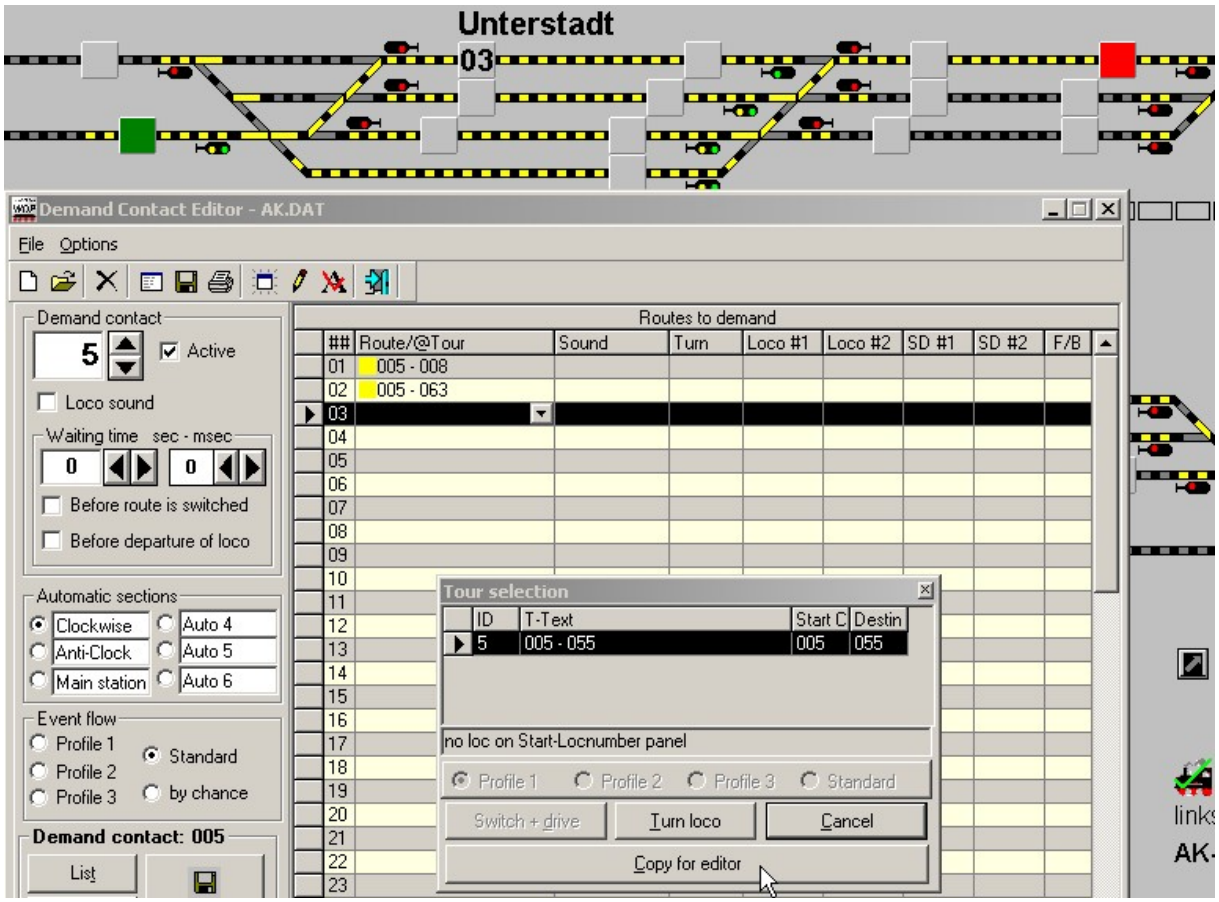
Continue, as described above, for further route entries.

12.3.3 Registering tours in the demand contacts list

For registering for tours in the demand contact lists you have only **one** possibility, because a list of tours doesn’t exist.

With a left mouse click select the line in the „Demand routes“ list, where a tour should be entered.

Click with the **middle mouse button** on the start and then on the destination contact of that route in the track diagram.



A window „Tour selection“ appears. A list of all tours with their ID text, internal ID number, start and destination contact, found by the system, are displayed.

Select the tour from the list with a click; it appears in the track diagram with a yellow background. The start train number symbol is marked green and the destination train number symbol is marked red.

Click on ***‘Copy for editor’*** and then on the marked list line. This tour is automatically copied to the line under *„Route/@Tour“.*

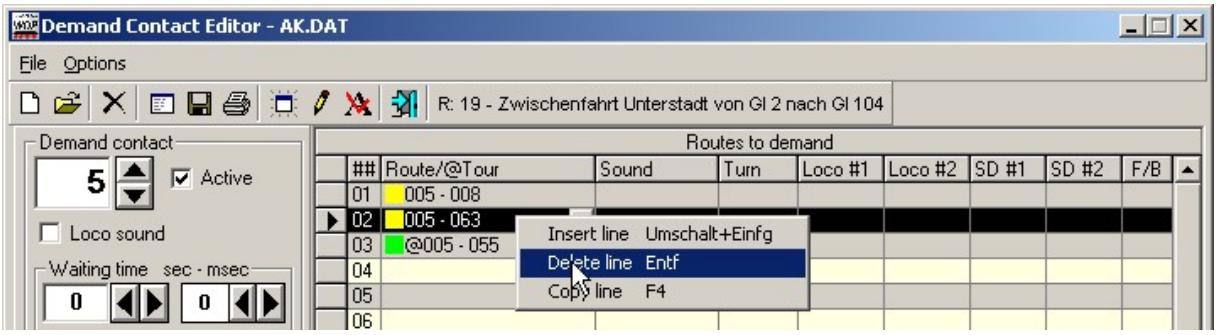
Continue, as described above, for further tour entries.

TIP!
For selection tours you can also use the CTRL- key plus <u>right mouse button</u> instead of the **middle mouse button**.

Hint!
The other buttons and selections in the start/destination selection windows for routes and tours have no function when using this selection window for registering tours and routes for the demand contacts editor.

12.3.4 Editing the list of demand contact routes and tours

For deleting or editing routes and tours in the list, select the according line with the left mouse button and press then the right mouse button.

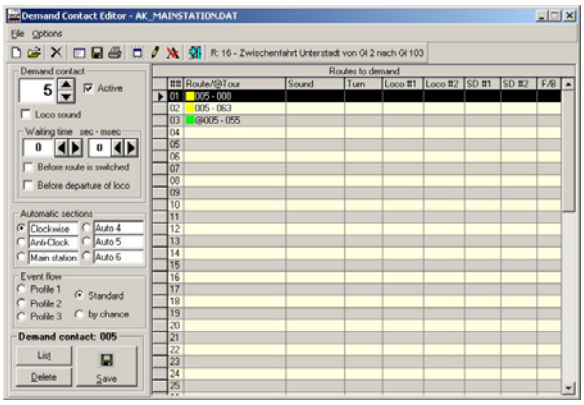


This opens a context menu, where you can select the desired command.

Hint!
For editing the line **has to be** under laid in black.

12.3.4 Saving demand contacts

When you have registered all data for your demand contact click on **'*Save*'**.



If you switch over to another demand contact or want to close the editor without saving, a security question is displayed.

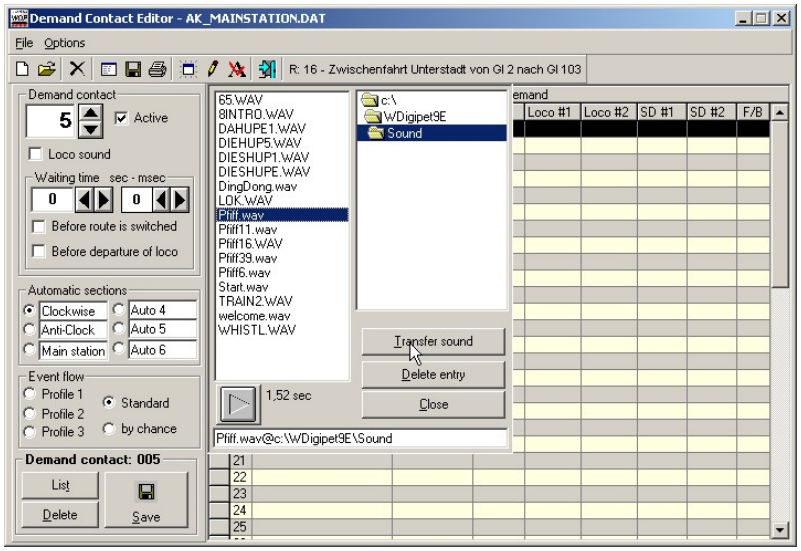
After saving you can enter **further** demand contacts in the same manner as described above.

The sections above described the minimum of entries for the demand contacts, all other possibility with the demand contacts in **WIN-DIGIPET 9.0** are described in the following sections.

12.4 Sounds when switching routes

A sound effect can be played, if a demand contact can execute a possible demand route. The sound is played immediately **after** the complete route is switched.

Click with the left mouse button on the line in the list of the Demand Contact Editor in the column *"Sound"* on the route which should play the sound. The route **must** be recorded. The line with a switch and a selection arrow appears. A mouse click opens a window to select a sound.



All Wave files are displayed, contained in the sub directory **\SOUND** of WIN-DIGIPET.

You can search in all directories on drive C for sound files.

Click on the file that should be played after the route has been switched.

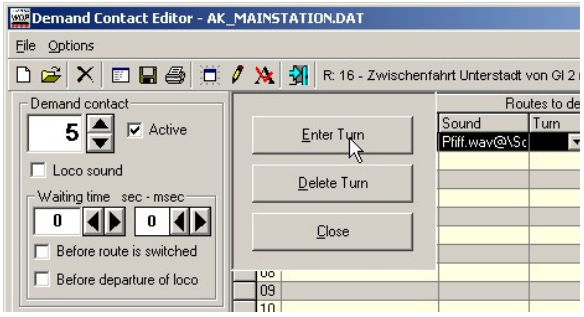
The name and the replay time in seconds appear in the **top line field**.

The large arrow at the bottom right- Quick info: „Play" – lets you test the sound.

Clicking on ***'Transfer'*** or double click on the sound file, records the sound into the column *"Sound"* of that route.

'Delete' deletes the recorded sound files from the list.

12.5 Reverse command



You want to change the direction of your locomotive/push-pull train?

To change the direction of the train, click on the line of the relevant route and click on the column on the right side *‚Command'* and activate the switch ***‚Enter TURN'*** **.**

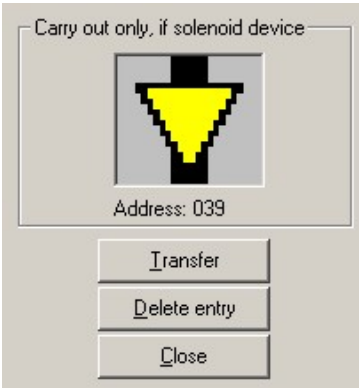
The reverse command you deleted always by using the button **'*Delete turn*'**.

The symbol **#<>#** shows you, that AFTER the switching of the route and BEFORE the train starts to move, the direction of the train will be reversed.

12.6 Loco #1, Loco #2, SD #1, SD #2 and F/B

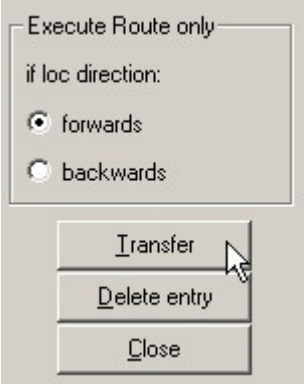
With these conditions you can diversify your DC-operations.

Click on the selection arrow in the cells of the columns „*Loco #1*“ or „*Loco #2*“, a selection window appears. You can register a locs digital address via keyboard or drag&drop. You must also choose whether the train number display of this loco has to be red or black. Now this line won't be executed until the train number display of this loco has the selected colour. With this powerful feature you are able to configure “home-tracks” for (e.g.) fiddle yards even if in those fiddle yard-tracks up to 3 trains are located in a row behind each other. (Drive to “home-track” if loc xy is “red”).



In the columns „*SD #1*“ or „*SD #2*“ you find the opportunity to enter two solenoid device addresses as well (signals, switches, turnouts) which current condition („red“ or „green“) will also be taken into consideration, **before** a route will be switched.. Therefore you are able to configure marvellous DC-events, which react when you e.g. switch the configured signals (a kind of semi-automatic). You may create dependencies (drive, if the ICE is in the station), **without** modifying your model railroad. Furthermore you are able to create configurations, in which different kind of routes - depending on switch-settings – are used within the DC-Operation (e.g. condition 1: all trains out of the fiddle yard, condition 2: close the fiddle yard and all trains go round in circles, condition 3: all trains back to the fiddle yard into their designated and assigned “home-tracks”).

Click on the selection arrow in the cells of the columns „*SD #1*“ or „*SD #2*“, a selection window appears. You can register a solenoid device via drag&drop and select the desired state of the solenoid device by clicking on the picture.



The last column „*F/B*“ can be used to create a dependency to the direction of the locomotive.

If you click on the list arrow in the column *"F/B"*, a window opens where you can choose the locomotive direction. Here forward is the same as "arrow up" and backwards as "arrow down" in the locomotive control.

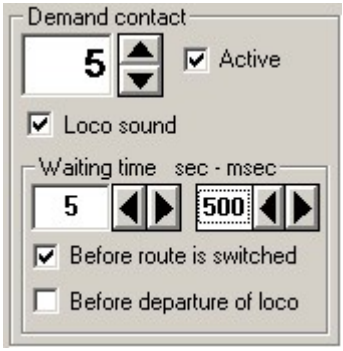
All dependency can be deleted of course by clicking on ***'Delete entry'*** in the corresponding window.

12.7 Loco sound

With this option you can force **WIN-DIGIPET 9.0** to play the loco sound registered in the locomotive database when the route is switched. This can e.g. be used for playing a warning whistle before a train starts to move in a station. This option can be selected by checking the field *„Loco-Sound“*.

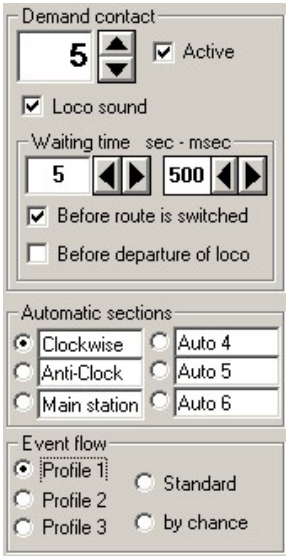
Unchecking this field disables the loco sound for this demand contact.

12.8 Waiting time at DC contact



With **WIN-DIGIPET 9.0** you are able to configure an individual waiting time per demand contact to avoid that the trains will get a new route too fast. So your “passengers” don’t have to jump out of the windows of the train at the stations, because the trains have to wait until they are able to move again. This waiting time is divided in a) *wait* BEFORE a new route will be switched or b) *wait* AFTER the route is switched to make it possible that a “departure-sound” can be finished or signals (or motorized turnouts) are completely switched (see picture below – blue rectangle) Of course you are also able to activate BOTH, this means the train at least has to wait a minimum of double duration until it may use a new route (time BEFOR a new route is switched + time until the train is allowed to drive). If you don’t enter any waiting time, everything remains the same as it was in the past.

12.9 Event flow



This option is useful to get further influence on the event flow.

If have created profiles for several routes you select here how to execute the routes demanded by this DC contact, you can select „*Standard*“ or „*Profile (Profile1 to 3)*“.

You can even select „*Random*“, if you want the program to select an event flow for you.

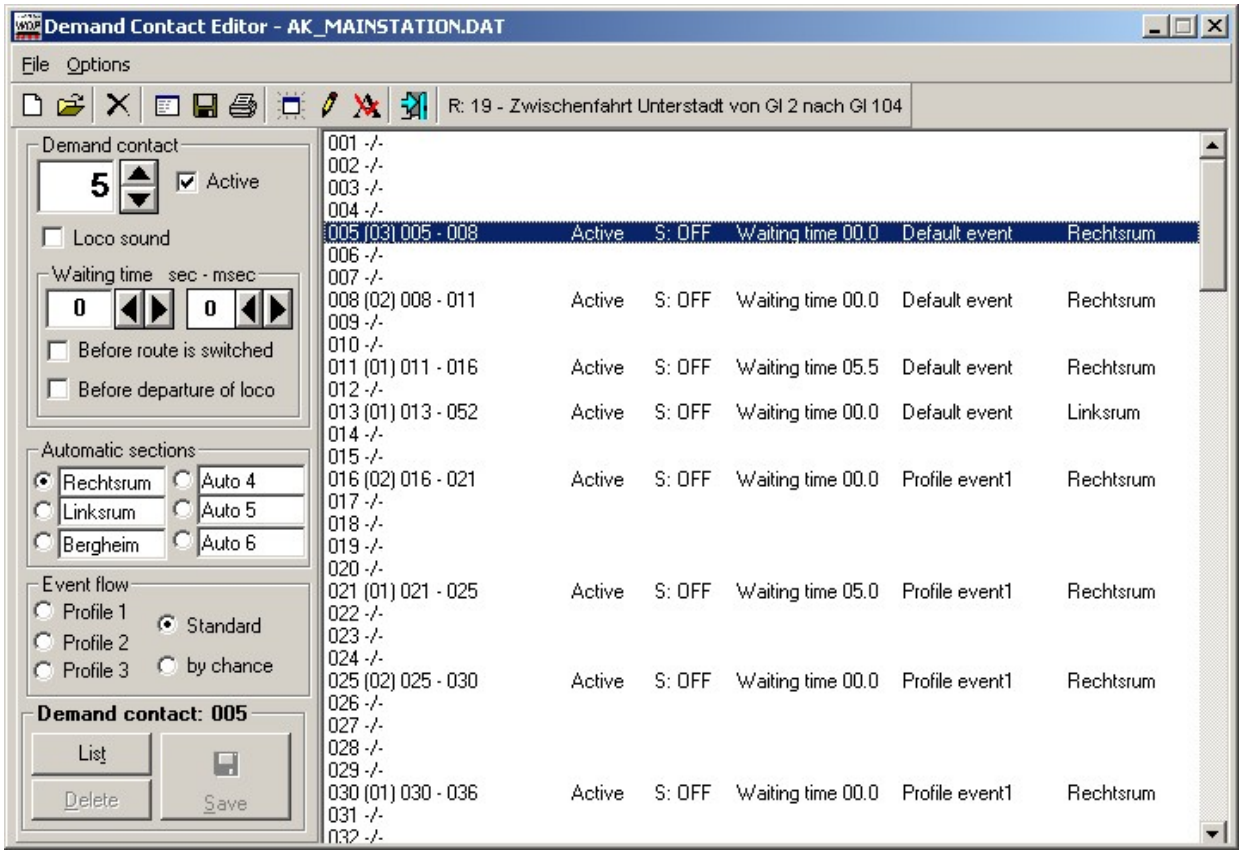
TIP!
The DC contact **doesn't have to** be always the start contact of the route. You can use also another contact of your model railroad layout in order to avoid a traffic jam.

12.10 List of all demand contacts

With the menu command <Options> <List of all demand contacts > or by clicking on the symbol in the toolbar of the DC editor a text window in the right hand side of the editor opens.

Feedback contacts, which are not made as demand contacts, are marked with **-/-**.

Only the text of the first demand route is displayed. The number in brackets behind the contact number indicates, how many demand routes you have recorded in total at the contact.



„Active“ indicates, that you have the “Active” option of this DC contact.

„S:ON“ or „S:OFF“ means, that you have (de-)activated the loco's sound.

„Waiting 00:0“ represents the waiting time of this DC contact.

„Clockwise.“ marks that automatic operation area, allocated to the contact.

A double click on a line in the list loads the contact into the dialogue field, ready for changes.

12.11 Create a new DC file

Every time you open the DC-editor via <File> and <Demand contact editor> or the symbol in the toolbar, the DC file edited last is opened.

When you start this editor for the first time this file is called AK.DAT according to section **12.3**.

If you want to create a new DC file use the menu command <File> <New> or the symbol in the toolbar.

After creating a new DC file it is displayed in list view, so you can see that this file is empty, it is called “AK-noname.dat”

The first thing you should do now is to enter a new individual filename via <File> <Save as new file>, which will be indicated in the menu bar of the DC-Editor immediately. **After that** you should start to enter and configure your DC-contacts .

12.12 Changing, renaming and deleting DC files

For changing your DC file **open** the file via <File> <Open> or the symbol in the toolbar of the DC editor.

Now you can make all changes that you like.

If you want to save **(rename)** your changes in another DC file, use <File> <Save as new file>.

You can **delete** the currently loaded DC file via <File> <Delete> or with the symbol in the toolbar. The file will be deleted not until you have answered a security question.

If you answer with yes, an empty DC file „AK_NONAME.DAT“ according to section **12.11** is created and displayed.

12.13 Standard window size and notes

IF you changed the window size of the DC editor during your work you can restore the original window size via <Options> <Standard window size> or by clicking on the symbol in the toolbar of the DC editor.

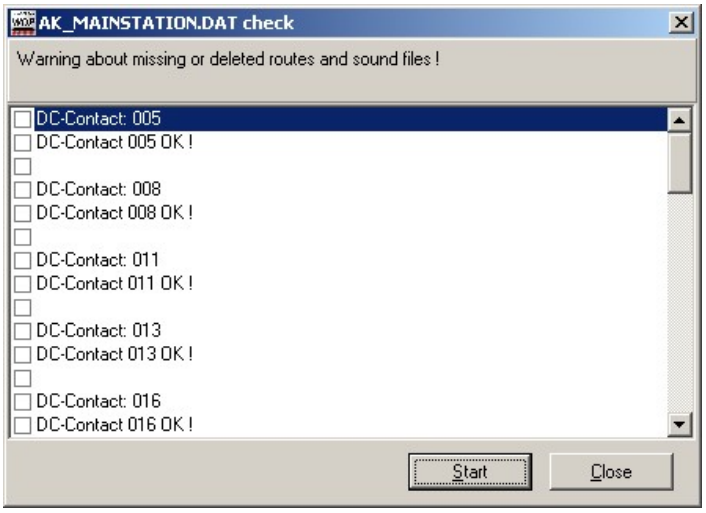
You can make individual notes for your DC file in a small notes window, which can be opened by <Options> <Notes> or via the symbol in the toolbar.

12.14 Checking DC contacts

You can check your DC contacts with a special checking routine. This is very useful if you have troubles with the operation of your DC contacts.

First open the check window via <Options> <Check Demand contacts> or click on the symbol in the toolbar.

A new window appears. If you click at the '***Start***'-button, all configured sounds and routes of the current DC-file will be checked, if they are available in the appropriate database or folders. Therefore you are able to check, if even after several changes everything's still OK.



12.15 Print demand contacts

For printing your demand contacts open the print window via <File> <Print> or by clicking on the symbol in the toolbar.

The printing window is self-explanatory. You have many possibilities to select what should be printed.

12.16 Practical tips for the automatic with demand contacts

The **WIN-DIGIPET 9.0** automatic with demand contact is really contrary to the timetable operation that is completely reproducible. When using the automatic with demand contacts the traffic on your model railroad layout is in most cases not foreseeable. Basically the basic idea of the DC automatic is to create an "aquarium effect" on the model railroad layout with **WIN-DIGIPET 9.0**, i.e. - depending on your configuration - it will never happen the same and even after 100 hours the trains still run diverse and unpredictable, but safe on your model railroad layout.

When configuring the DC automatic you should notice the following tips:

- In most cases the start contact of the route is also the demand contact for the automatic.
- When operating a hidden station the start contact for the routes leaving the hidden station shouldn't be used as demand contact. Otherwise the hidden stations will be emptied completely. You should use a contact in the route, which brings a new train to the hidden station as demand contact. By this a new arriving train demand the leaving of a train that is already in the hidden station.

- For the realization of this point it is often useful to integrate a virtual switch in the leaving route. This switch is set to "green" when a new train arrives on another track in the hidden station. Then the exit is controlled as a function of this switch and the leaving train set this virtual switch again back to "red".
- To avoid traffic jam on your model railroad it is often useful to create additional demand contacts for some routes.
- To control the automatic operation of a one track with trains travelling in two direction use virtual switches (Permission arrows). This will guarantee an operation without problems.
- Use the „*Waiting time*“-Function, otherwise your passenger have no time to leave or enter the trains in your stations.
- The both random generators will help you to the increase the “aquarium effect”.
- Define different automatic sections, this helps you to (de-)activate the automatic in several parts of your model railroad layout. After (de-)activating automatic sectors, you have to restart the automatic using the button .

  Important notice!
  On this occasion, you will get problems if the automatic sections overlap mutually and caused by one train blocks other trains. You should think of this when creating automatic sections.
- You should use tours for longer distances with several block systems, otherwise the train would stop and start again at the end of every block system.

12.17 Closing the demand contact editor

Select in the menu command <File> <Close> or click on the symbol in the toolbar.

13 – TOUR-SCHEDULE-EDITOR

13.1 System and functions

The **WIN-DIGIPET 9.0** tour automatic gives you the possibility - as alternative to the inflexible timetable and the very flexible automatic with demands contacts – to create also an automatic operation on your model railroad layout with functions taken from both automatics.

The timetable plans every train operation very detailed and there is no room for variation. This means the timetable can be repeated a thousand times and will always behave same.

In contrast to this the automatic with demand contacts is never reproducible in all details, because many decisions in this automatic are random decisions.

The tour automatic combines features of the timetable and the automatic with demand contacts. Also the tour automatic should be independent from the used locomotive and because of this an exchange of locomotives is much easier than in timetables.

In the tour automatic you can use routes, tours and profiles, so you can use also sound effects etc..

WIN-DIGIPET 9.0 recognises which parts of your model railroad layout are currently occupied by trains/locomotives through feedback contacts. Routes begin at a **start**-contact and end at a **destination-**contact; the required registrations have to be made in the route editor (see **8.7** to **8.10**).

In the tour schedule editor **WIN-DIGIPET 9.0** you describe your tour automatic in tables. One row of your table stands for one locomotive-/train-movement described by a route or tour.

The **WIN-DIGIPET 9.0** tour automatic is mainly controlled via demand contacts. A demand contact is a feedback contact (= a contact track area) in WIN-DIGIPET 9.0. The defined feedback contact will operate the routes/tours, defined by you, as soon as the locomotive passes over it. Additionally you have the possibility to register very different conditions that have to be fulfilled, before an automatic row is allowed to execute. These conditions are described later.

Three random generators help also to generate a very varying tour automatic in **WIN-DIGIPET 9.0**.

13 – TOUR-SCHEDULE-EDITOR

If you want to use the **WIN-DIGIPET 9.0** tour automatic, you have to activate tours in the system settings as described in section **4.15.1**, because you won't be able to run this automatic or even open the editor. There you can also register the maximum rows for the tour schedule editor (up to 800).

13.2 Planning and precautions

It is advisable to think about the way you want to create your automatic and to make some notes before you start to use the editor. You should even think oven switching- and release-conditions of the used routes, if they are compatible to the planned operations.

The rout automatic can be planned in the tour schedule editor in the same as for timetables and the DC automatic. In the tour automatic you can see directly how the several rows are treated.

In the tour schedule editor rows with...

- the green treated as in the timetable.
- the red treated as in the automatic with demand contacts.
- the symbol treated as in the timetable but with repetitions.

TIP!
Before starting the tour automatic, you should switch all solenoid devices to basic settings according section **18.4**.

13.3 Registering in the tour schedule editor

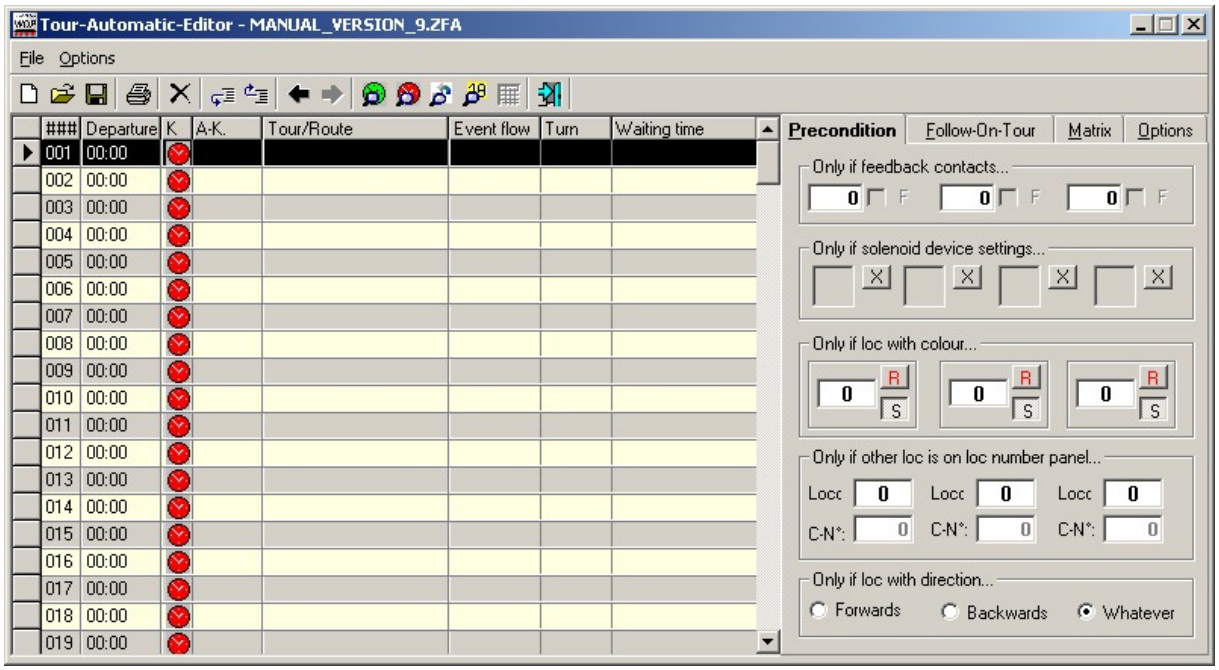
Select the menu command <File> <Tour schedule editor> or click on the symbol in the toolbar.

If you haven't registered a tour before you will see an empty list.

In the left part of the tour schedule editor you side a list window and on the right side you see four index cards...

- Precondition
- Follow-On-Tour
- Matrix and
- Options.

You should directly assign a filename to your new tour automatic, for this purpose select the menu command <Files> <Save> or click on the symbol in the toolbar of the tour automatic.



You should assign a meaningful name to your automatic, but you are not allowed to use the following characters/signs: „äöü@§$%&/(){[]}\|“, dot and comma, but underscore (_) and blank are allowed.

After clicking on **‘*OK*’** the file will be saved and the new name will appear in the headline of the editor.

In the list window you will 6 columns, column 3 (K) is only used for information. In the first column „***###***“ you can see the row number. The maximum row number can set in the system settings (see **4.15.4**).

A selected row will be under laid in black.

13.3.1 Tour by arrival

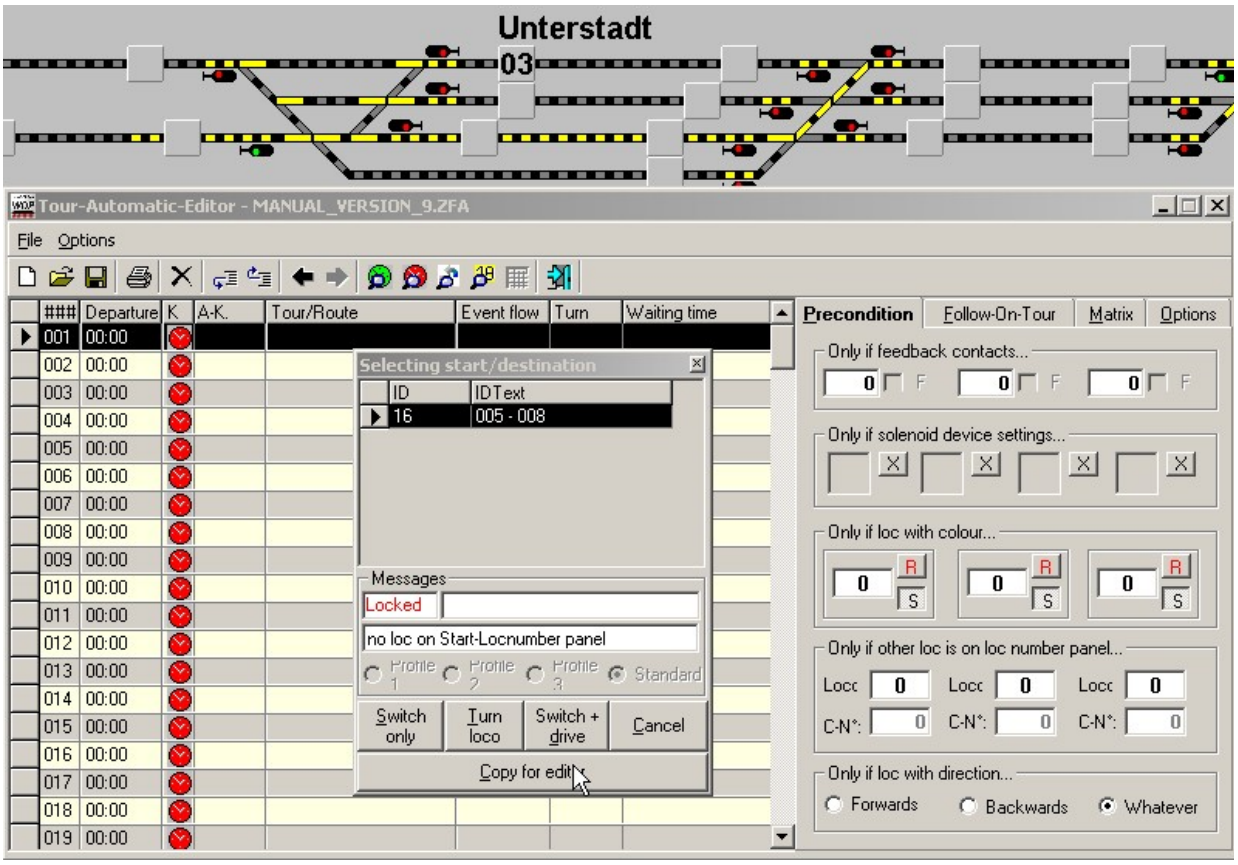
This is the default settings, when registering data in the tour schedule editor and because of this you will normally see the symbol in the column “K”.

Now select the row, where you want to register a tour or route. If you want the row to execute immediately after arriving of the train of the start contact and fulfilment of the switching conditions, you don't have to make additional registrations in the column „*Departure*“ (see **13.5.1**).

Now select with start-/destination-function according to sections **18.7.1** and **18.5.1** the desired tour or route. In this example we will register a route.

Click with the right mouse button in your track diagram onto the start- and then on the destination-train number display of the desired route.

In the window „Start/Destination select“ select the desired route and click on the button '***Copy for editor***'.



The route will be transferred to the select row of the table and the window "Start/Destination select" will disappear.

In the column „*Event flow*“ the presetting from the system settings appears according to the settings on the index card „Program settings – Profiles“ (see section **4.14.2** ; here “Profile 1”.

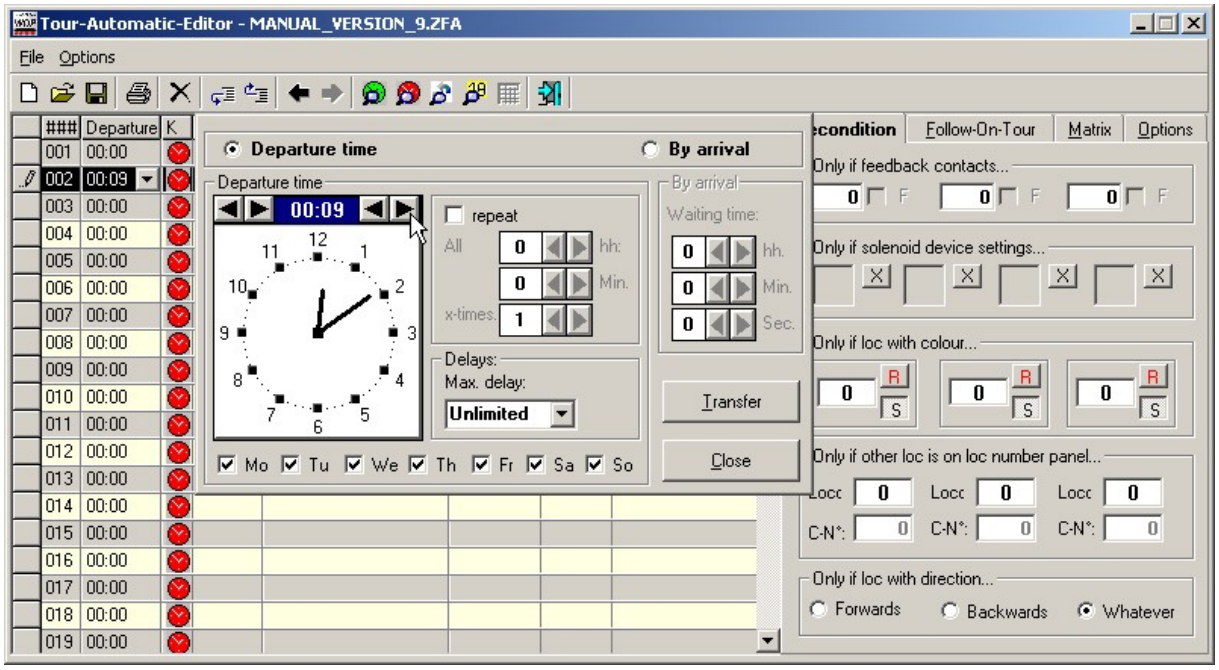
With this registration you made the basic settings for this row and if you don’t need any additional conditions, you are finished with this row. The other options are described later in this chapter.

The next rows can be registered in the same way or as described in the next section.

13.3.2 Tour at departure time

In the next we will register a train that should depart at a specified time. For this purpose click on the small arrow in the column „*Departure*“ in the desired row of the tour schedule editor.

A new window will appear and in this window you can select the departure by the arrow buttons at the top of the clock or directly by moving the watch hands.



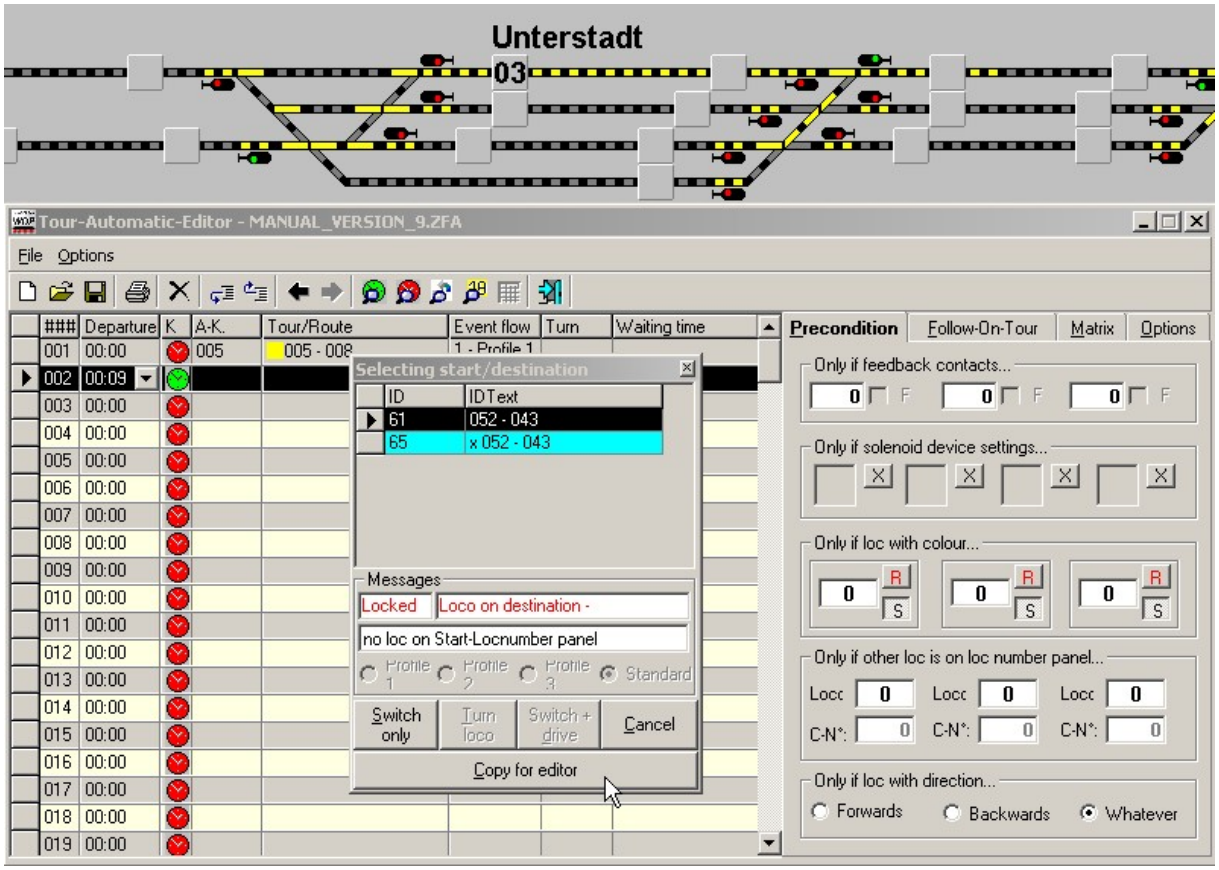
Also repetitions, waiting times, maximum delays and weekdays can be selected. This is described later on in this chapter.

After the selection of the departure time, click on the button ‘***Transfer***’ and the small window will disappear.

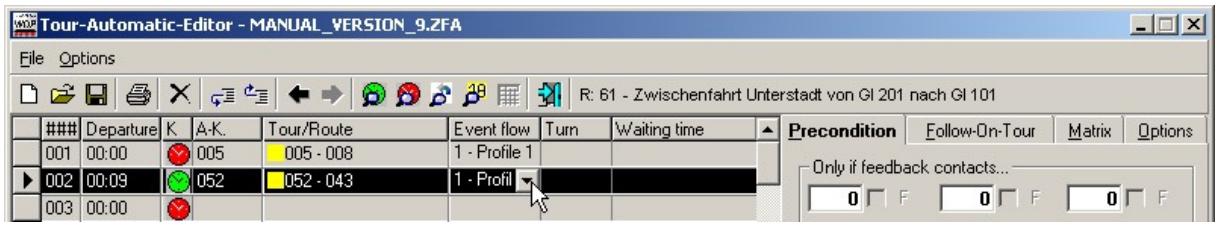
Now select with start-/destination-function according to sections **18.7.1** and **18.5.1** the desired tour or route. In this example we will register a route.

Click with the <u>right mouse button</u> in your track diagram onto the start- and then on the destination-train number display of the desired route.

In the window „Start/Destination select“ select the desired route and click on the button ‘***Copy for editor***’.



The route will be transferred to the select row of the table marked by the symbol and the window “Start/Destination select” will disappear.



In the column „*Event flow*“ the presetting from the system settings appear according to settings on the index card „Program settings – Profiles“ (see section **4.14.2** ; here “Profile 1”.

With this registration you made the basic settings for this row and if you don’t need any additional conditions, you are finished with this row. The other options are described later in this chapter.

13.3.3 Registering additional tours or routes

For the further rows in the tour schedule editor it is irrelevant if use route or tours (chapter **9**). Because of this you immediately start to create a tour automatic using your existing routes, and later also add tours after their creation. In the following sections you will get to know the advantages of the tour automatic compared to the automatic with demand contacts.

13.4 Registering follow-on-tours

On the index card „Follow-on-tours“ you can register **following**-routes and -tours. But you to put the stress on “following”.

The follow-on-routes are handled as routes in tour, i.e. the train will not stop before the signal, if the next block system is free and be used.

Follow-on-routes are useful in every row of the tour schedule editor for...

- Extension of a route **without** a junction (e.g. a simple turnout) with **1!** route or tour
- Extension of a route or tour **with** a junction (e.g. a simple turnout) and **2!** routes or tours
- Extension of a route or tour **with** junctions (e.g. a simple turnout) and **several** routes or tours e.g. a tour ends at the signal before the station and the follow-on-routes bring the trains to the platform tracks.

The **start**-contact of the registered follow-on-route(s)/tour(s) **has to be always** the same as the **destination**-contact of the route/tour before.

This explanation was very abstract, so we will describe the function of follow-on-routes/tours in the following examples.

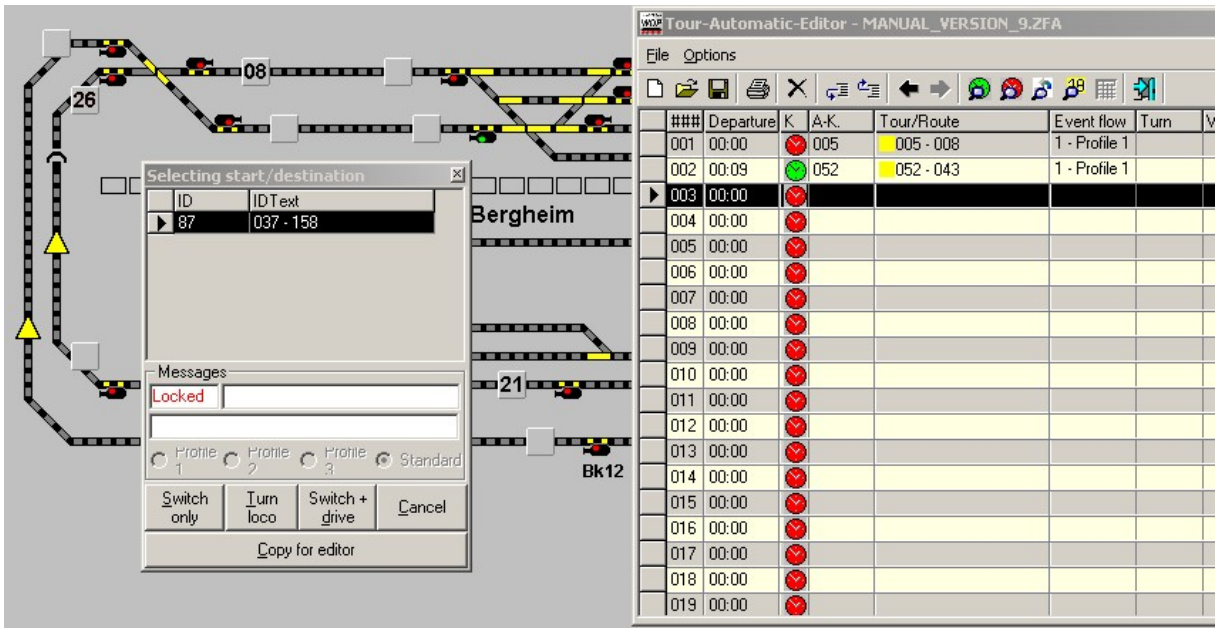
13.4.1 Extension of a route without a junction

This makes sense when...

- You **haven’t** registered any tours until now or
- If you want to begin the tour not before the destination contact of the first route e.g. when leaving the hidden station and you want the tour not start before the first contact of the main itinerary.

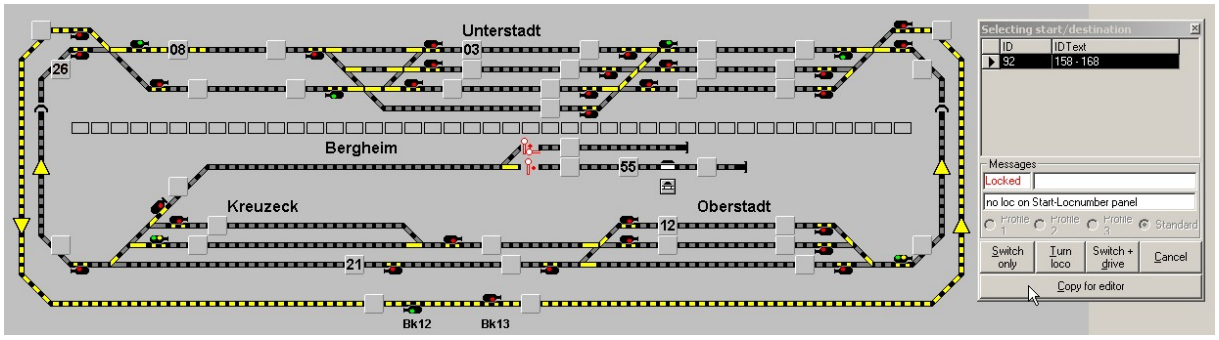
  This could save you a lot of time, because you would have to create less routes and nobody will see it the train stops again in the hidden area, because there the next tour will start.

We will describe both registrations in the tour schedule editor.



Select with the start/destination function according to section **18.5.1** the desired route. In this example this is the route 037 – 158. This route starts at the train number display (here occupied by locomotive 08) and ends at the block signal Bk12.

Select the desired route and transfer it via **'*Copy for editor*'** into the selected row.



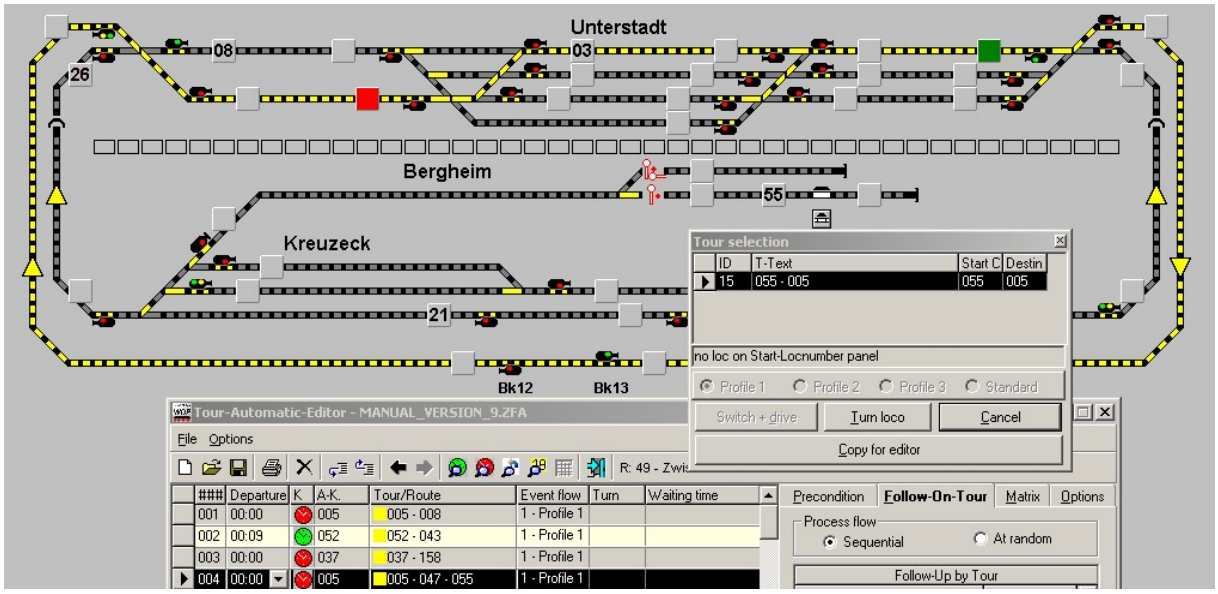
In the track diagram the main route (here with feedback contact numbers) is still shown. After registering the route 037 – 158 select the index card „Follow-on-tours“ and select with the start/destination function according to section **18.5.1** the desired follow-on-route. This is the route with ID-Text 158 – 168. This route starts at the block signal Bk12 and ends at the entry signal of the station Unterstadt (here occupied by locomotive 03).

Select the desired route and transfer it via **'*Copy for editor*'** into the selected row on the index card "Follow-on-tours". In the track diagram the complete tour is highlighted in yellow and the train will **not** stop before the block signal Bk12, if the follow-on-route is free and can be switched.

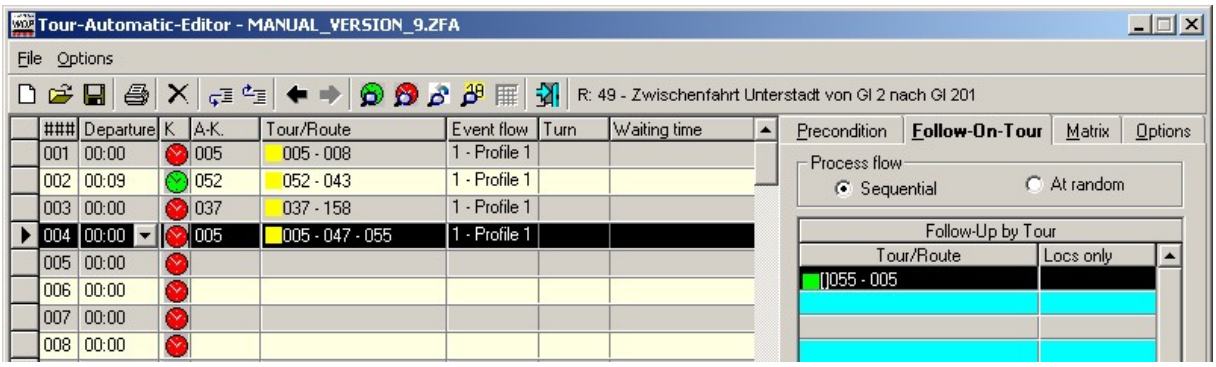
In our next example you have registered a tour according to section **9.2**. The tour starts at contact 055 (green train number display) and ends at contact 005 (red train number display). Both contacts are in the hidden station and because of this, nobody will see, that the trains will stop for a short time at the start and destination, until they will be continued by **WIN-DIGIPET 9.0**. This will save you a lot of time, because you have to create fewer tours from the hidden station over the main track back to the hidden station.

In the tour schedule editor register via the start-/destination function and copy for editor the route from contact 051 (actually occupied by locomotive 20) to contact 055, which is the start-contact of the following tour.

Now select the index card “Follow-on-tours” and select the first row. Using the start-/destination-function for tours according to section **18.7.1** and click with the middle mouse button of the start-train number display 055 (green train number display) and afterwards with the middle mouse button on the destination-train number display 005 (red train number display). In the tour selection the tour will be displayed and shown in the track diagram.



Select the desired tour and transfer it via ‘***Copy for editor***’ into the selected row on the index card “Follow-on-tours”.



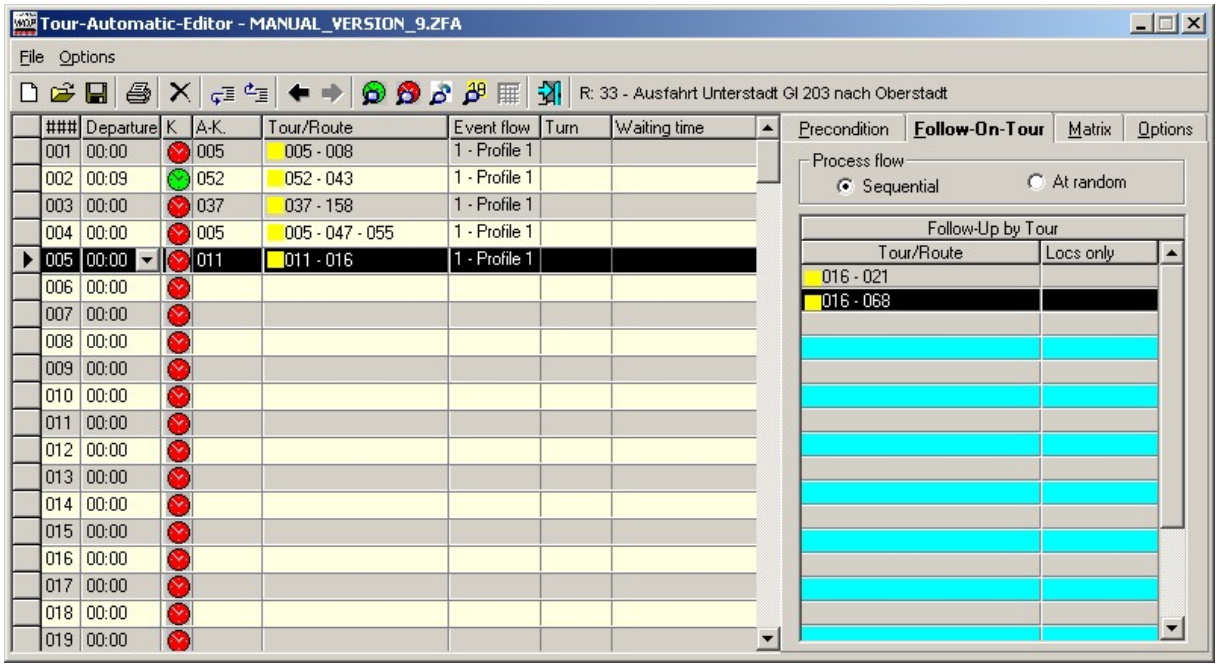
For distinction between tours and routes in the editor, routes are marked with a green square and tours with a yellow square.

13.4.2 Extension of a route/tour with junction

In this example the train can drive through a turnout to two platforms of the station and only one route/row should be used and registered. The main route 011 – 016 begins at the start train number display occupied by locomotive 50 and ends at the entry signal/ train number display occupied by locomotive 26.

The routes on the index card “Follow-on-tours” are the routes 016 – 021 and 016 – 068.

Using these two follow-on-routes no train will not stop at the entry signal of the station, if a minimum of one platform track is free and the switch conditions are fulfilled.



When registering this follow-on-routes the order of registration defines, which route should be checked first, if you have selected “sequential”. When using the option “At random” the follow-on-routes are selected by a random generator. If the first checked route is occupied the next will be checked and so on.

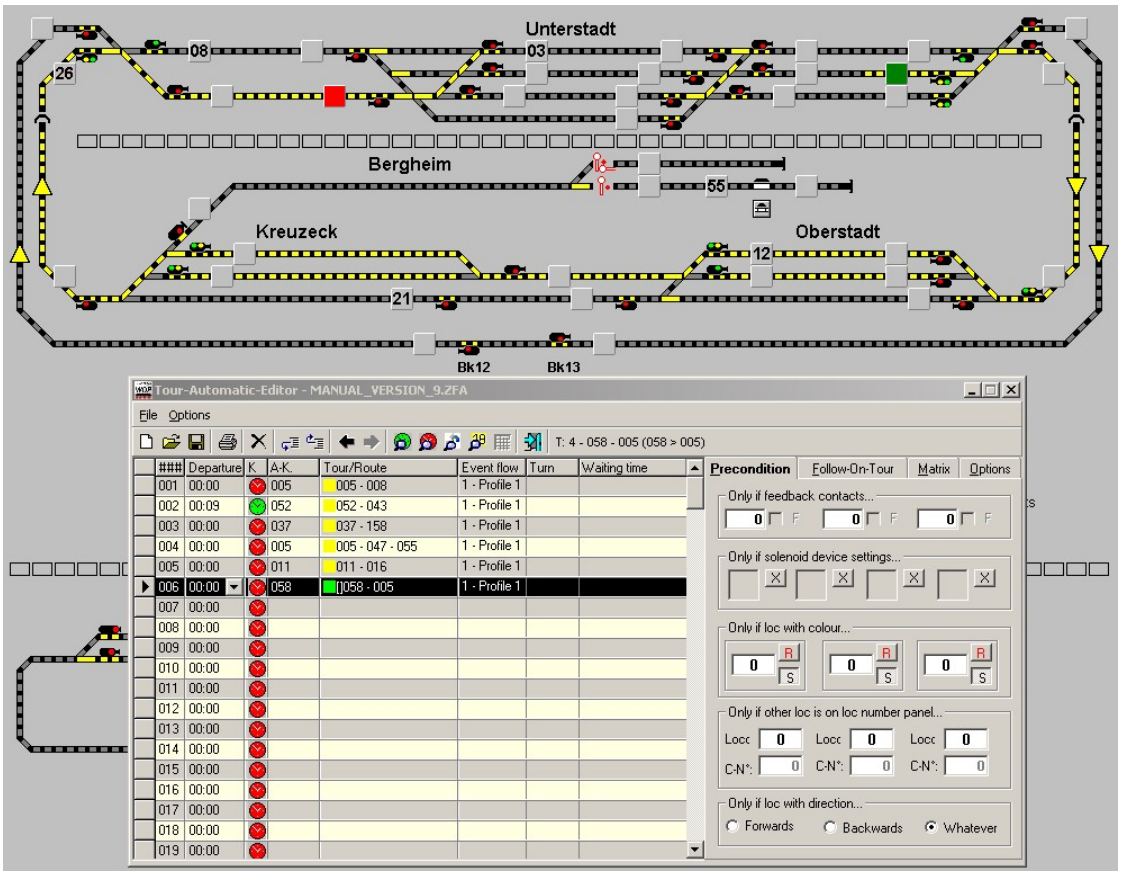
In section **13.4.4** is described how to change and delete follow-on-routes or how to allow a follow-on-route just for one locomotive.

Important information!
After registering follow-on-routes you should **immediately** change back to the index card “Preconditions” or any other. This is important because otherwise the next tour/route you want to register to the main list in the editor would be added as follow-on-route/tour.

13.4.3 Extension of a route/tour with several junctions

This is a classical example for leaving the hidden stations using several itineraries on the model railroad layout and driving back to several tracks of the hidden station.

Of course the hidden station is just an example, you can use this also for other constellations.

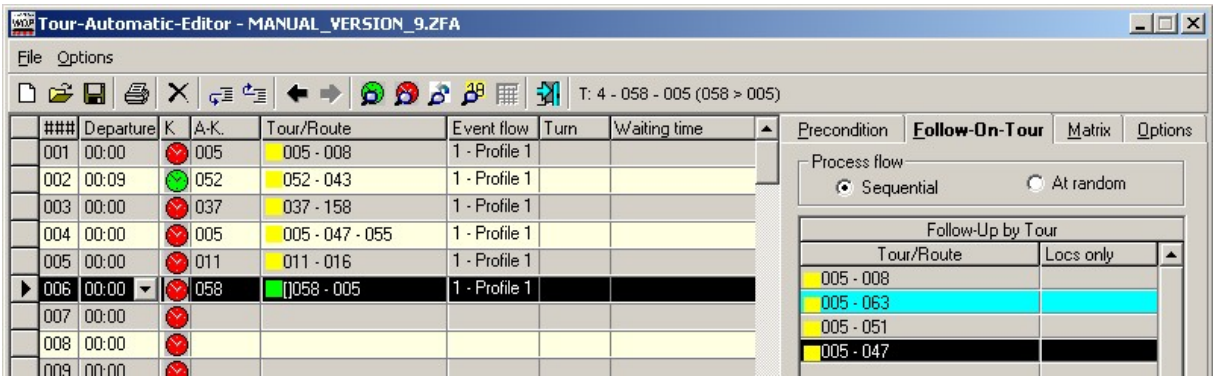


The tour begins here at contact 058 using several itineraries over two stations to contact 005. Using the start-/destination-function for tours according to section **18.7.1to** select the desired tour. In the tour selection the tour will be displayed and shown in the track diagram.

After the registration of the tour in the list of the tour schedule editor select the index card “Follow-on-tours” and register the follow-on-routes.

Four following routes for the entry to the hidden station are possible. These have to be registered in order of the desired usage of the tracks via the start-/destination-function for routes according to section **18.5.1** and copy for editor.

Using these four follow-on-routes no train will stop at the entry signal of the hidden station, if a minimum of one track is free and the switch conditions are fulfilled.

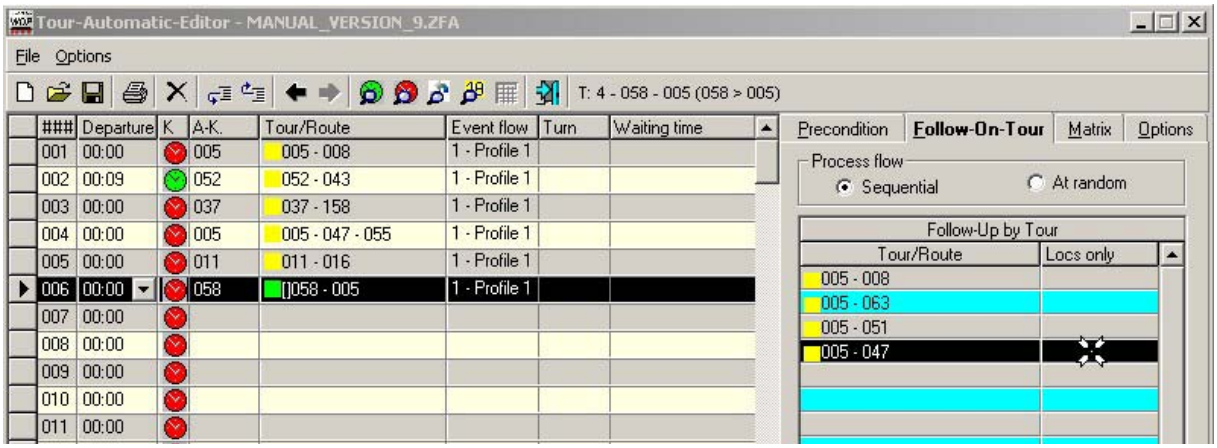


The registrations for the follow-on-routes are shown in the picture above.

The routes are checked/tested starting with the first row and then so on.

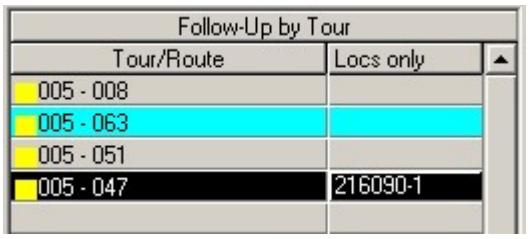
13.4.4 Adding, changing or deleting follow-on-routes/tours

On the index card „Follow-on-tours“ you can also assign one locomotive to each follow-on-tour/route. If you do this, this follow-on-route/tour will only used by the registered locomotive. For this purpose drag the picture of the desired locomotive with pressed right mouse button from the locomotive bar or a locomotive control to the column „*Locs only*“ of the desired row as show in the button and release there the right mouse button („drag & drop“).



This registration is also shown on the picture.

Now the follow-on-route 005 – 047 is only allowed for usage with locomotive „216090-1“.

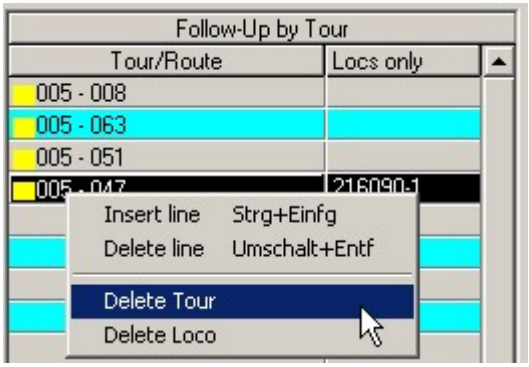


You can of course remove this locomotive later if you want.

You can also delete single rows or insert new for follow-on-routes/tours.

For this purpose select the desired row and open the context menu with the right mouse button.

The menu commands of the context menu are self-explanatory, only the last two commands are explained here.



If you just select <Delete tour> then only the tour/route will be deleted from this row.

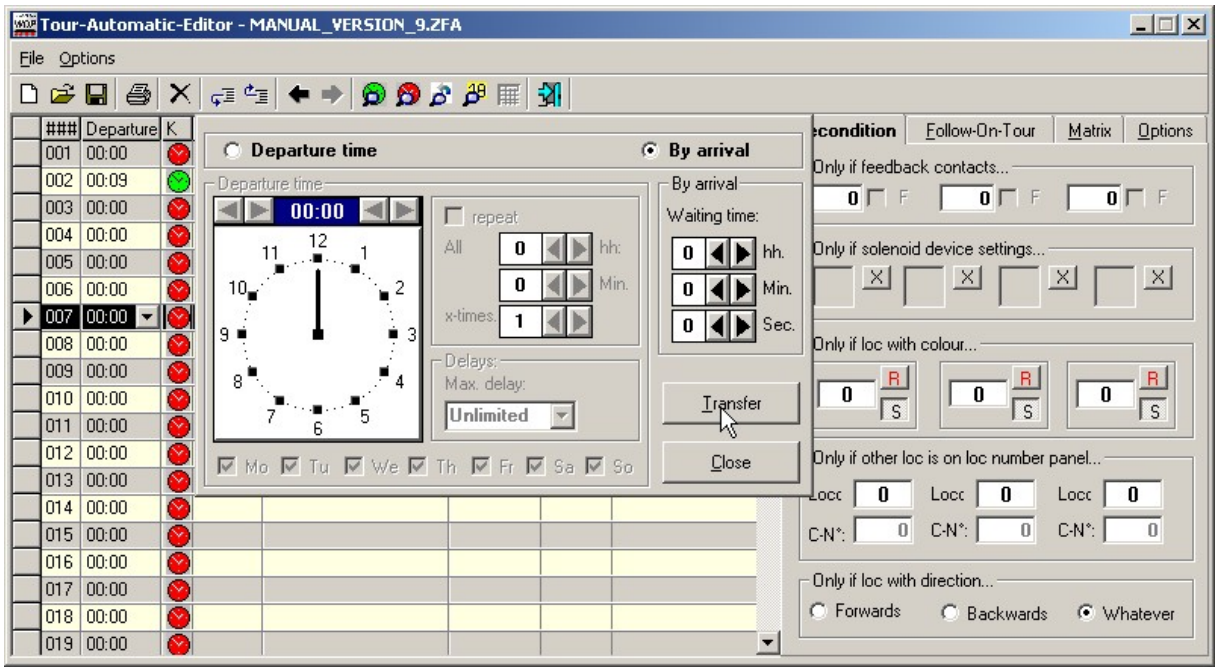
If you want to delete the complete row you have to select <Delete line>.

The same can be said for the command <Delete loco>.

If you want to change the order/manner of selection of follow-on-routes/tours, set the radio buttons to „*Sequential*“ or „*At random*“.

13.5 Registrations in the column „Departure“

After a click in the column „*Departure*“ the following frame will open, there you assign additional conditions for the execution of this row.



By default the radio-button „*By arrival*“ is selected. All registrations, that can be made in the frame „*By arrival*“ are the same as describe in the automatic with demand contacts described in chapter **12**.

If you set the radio-button to “Departure time” on the other hand, then this line will behave similar to the timetable described in chapter **11**.

You can confirm the registrations from these frames with the button ***‘Transfer’***.

13.5.1 Waiting time after arrival (By arrival)

Here you register the waiting time in hours/minutes/seconds.

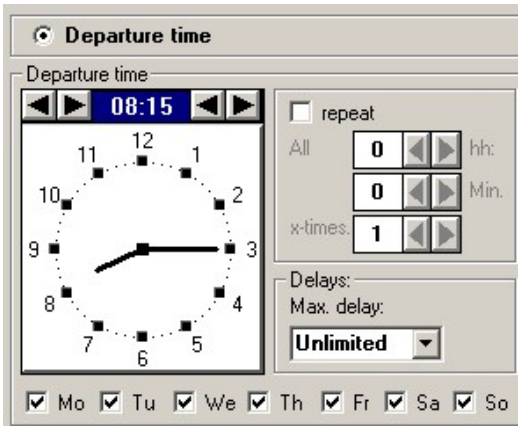
This is very useful at a train station, because it would make no sense if the train would restart immediately after stopping and the passenger have no time to leave. But you can find many examples for this feature.

The waiting is chosen with the arrow buttons.

13.5.2 Departure at specified time/weekday (Departure time)

By default all days of the week are checked and you have just to choose the departure time.

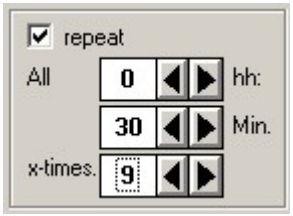
If you want to create an automatic for a whole week, you can of course also select, that some train should not/only drive on several days.



13.5.3 Repetitions

Also repetitions of row are possible. For example it is possible to create an automatic, where some trains drive a several tour x-times every hour.

The repetitions depend of course also on the selected departure time. If the departure time is set to 8:15 for example and the route/tour shall be repeated every 30 minutes for **10-times**, then have to enter the value 9, because the first execution is the departure time and the **first** repetition is already the **second** execution.



You can of course combine weekdays and repetitions as you like.

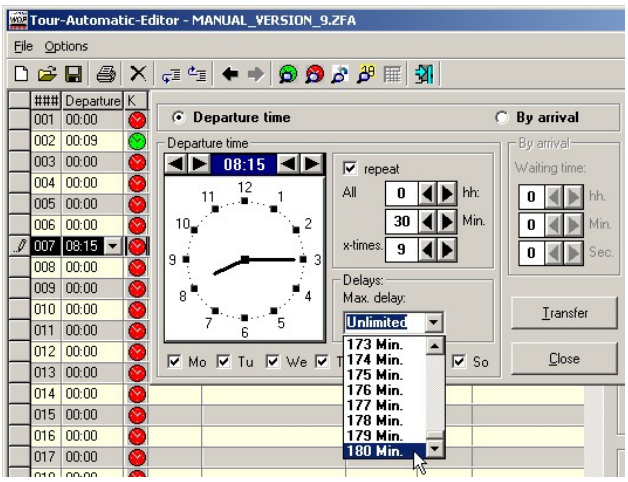
If you have checked „*Repetitions*“ the column „K“ in the main list will contain the symbol . By this it is very easy to find rows with repetitions.

13.5.4 Delays

In the field „*Delays*“ you can register the maximum delay from 1 to 180 min. or unlimited (Default setting).

Also these settings can be combined with every other setting.

In the picture, train would drive from 8:15 on every 30 minutes for 10 times the tour/route and trains may have a maximum delay of 180 minutes, otherwise the delayed train will be ignored.



13.5.5 Important information concerning departure time, repetitions and delays

If you register **repetitions**, these are only executed as long as the repeated execution start time is before 0:00 of the next day (maximum time 23:59).

This will show an example:

You have registered in the column „*Departure*“ 20:15 and in the frame „*Repetitions*“ 10 times every 30 minutes.

Then this row will be executed last at 23:45, because the next execution would be at 0:15 of the next day. This repetition after 0:00 won’t be executed by **WIN-DIGIPET 9.0**.

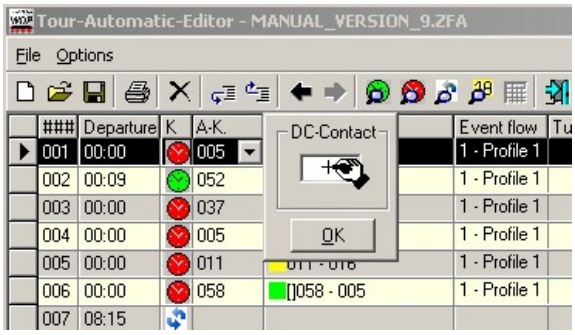
This does not implement **delays**, if your train shall start at 23:45 and has a delay of 20 minutes, the train will start anyway if you have registered a maximum delay of 20 minutes or more for this row.

13.6 Registrations in the column „D.C.“

In the column „D.C.“ **WIN-DIGIPET 9.0** registers automatically the start contact of the selected route/tour.

If you want to change this contact, click on the small arrow in this column.

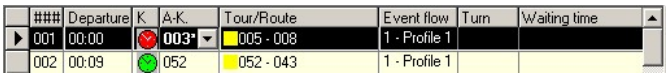
A small window will open as displayed on the picture. In this window you change the demand contact number.



You can registered the desired demand contact number via keyboard or you drag the demand contact number from a feedback contact in your track diagram with pressed left mouse button as shown in the picture. While this drag&drop-operation the mouse cursor will change its appearance.

This demand contact can be every feedback contact you like. This contact can be used to create a dependency to another train.

With a click on the button **'*OK*'** the demand contact will be transferred into the list.

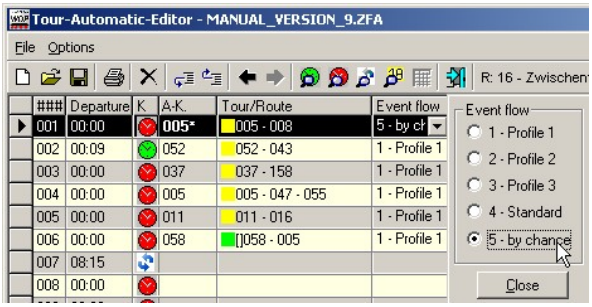


The changed contact number will be printed in **bold** letters and also marked with a star.

If you register now another route/tour for this row the demand contact will be overwritten again by the start contact of the route/tour.

13.7 The column "Event flow"

In the column „*Event flow*“ the presetting from the system settings normally appear according to settings on the index card „Program settings – Profiles“ (see section **4.14.2**).



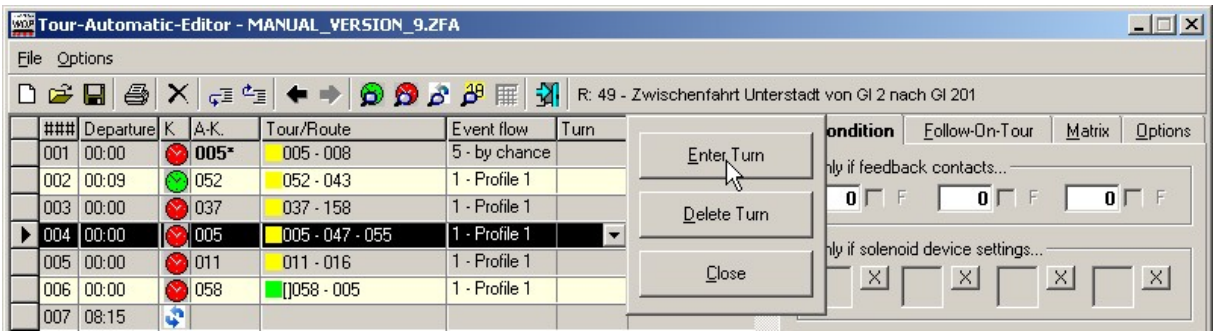
If you want to change the event flow, click on the small arrow in this column.

A small window appears and in this window you select the desired event low e.g. „5 – by chance“.

With a click on **'*Close*'** you can transfer your choice to the column „*Event flow*“.

13.8 The column „Turn“

You want to change the direction of your locomotive/push-pull-train? - no problem



For this purpose click in this column and then on the small arrow. In the small window click on the button **'*Enter turn*'** and the command will be transferred to the column and the window closed.

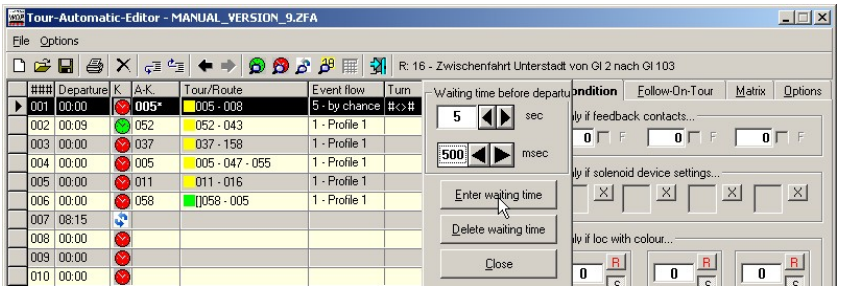
A turn command can also be deleted by the button **'*Delete turn*'**.

You can leave the small window without changes with the button **'*Close*'**.

<u>Important information!</u>
If you enter a turn, this turn will be executed at the **start** of the route/tour and not at the end.

13.9 The column „Waiting time“

In this column you can register a waiting time **before** departure of the locomotive. When you register here waiting the route/tour will be switched and then the locomotive will not start until the waiting time is over.



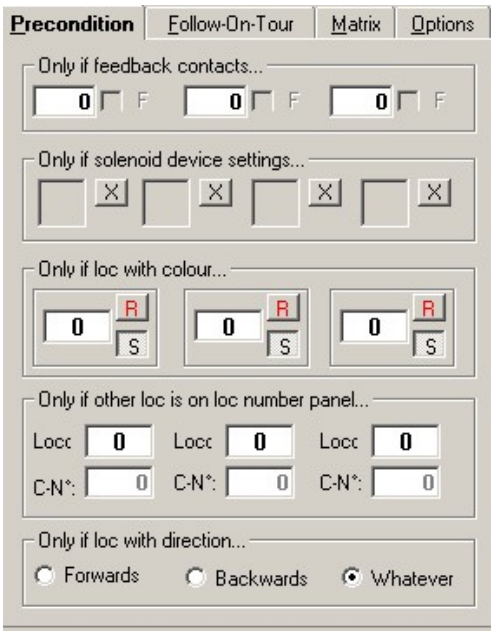
Click in the column and afterwards on the small arrow. The window displayed in the picture will appear. In this window you can select a waiting time in seconds and milliseconds. The maximum value is 99 sec 900 msec.

With a click on the button **'*Enter waiting time*'** you can transfer the waiting time into the list.

You can delete the waiting time in a row with the button **'*Delete waiting time*'**.

You can leave the small window **without** changes with the button **'*Close*'**.

13.10 „Preconditions“ for routes/tours



On this index card you can register several conditions that have to be fulfilled before the row of the tour automatic is allowed to switch. The four buttons X are explained by their tool tips and the three button-pairs R/S are used for locomotive-colour dependency and are described later.

The picture shows all kinds of preconditions available in the tour automatic of **WIN-DIGIPET 9.0**.

13.10.1 Only if feedback contacts….

In these three fields you can register up to three feedback contacts as preconditions for the execution of the selected row. You can select for every one of them if you want the contact to be occupied “O” or free “f” as precondition by the check boxes next to the text fields.

You can registered the desired feedback contact number via keyboard or you drag the contact number from a feedback contact in your track diagram with pressed left mouse button as shown in the picture. While this drag&drop-operation the mouse cursor will change its appearance.

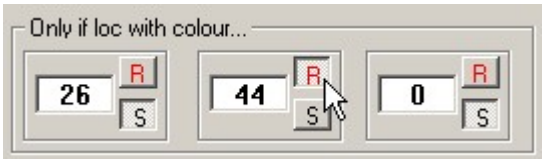
13.10.2 Only if solenoid device settings…

In this four picture boxes you can assign up to four solenoid device settings as preconditions for the execution of the selected row. You can use nearly all solenoid devices, except **crossings**.

Even switches and push-buttons can be used. You can drag the solenoid devices with pressed left mouse button from your track diagram to the desired picture boxes and release there the button („drag & drop“).While this drag&drop-operation the mouse cursor will change its appearance.

13.10.3 Only if loc with c…

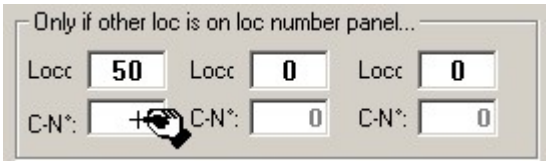
In these three frames you can register up to three locomotive numbers and desired colours as preconditions for the execution of the selected row. You can register the desired locomotive number via keyboard or you drag the locomotive number from the picture of the locomotive in the loco bar or the locomotive control with pressed right mouse button.



With the button-pair R S you select the desired colour (pressed button). In the example the locomotive colour of loco 26 has to be BLACK and RED for locomotive 44 before the row can be switched.

13.10.4 Only if other loc is on loc number panel…

You can register here up to three locomotive/contact combinations as preconditions for the execution of the selected row. This means, that the registered locomotive has to be on train number display with the entered contact number (for each locomotive/contact combination). The locomotive and contact numbers can be registered via keyboard or „drag & drop“ as described above.



This function can be used e.g. if you want a slow train not leave the station before the high speed train has arrived.

Important information!
This only works if you use contact numbers that are also assigned to a **train number display**.

This row of the tour automatic will not be executed until...

- the registered locomotive number is on the registered contact **and**
- this contact is occupied by the locomotive or its train.

13.10.5 Only if loc with direction

With this radio buttons you have the possibility to create a dependency of the locomotives direction.

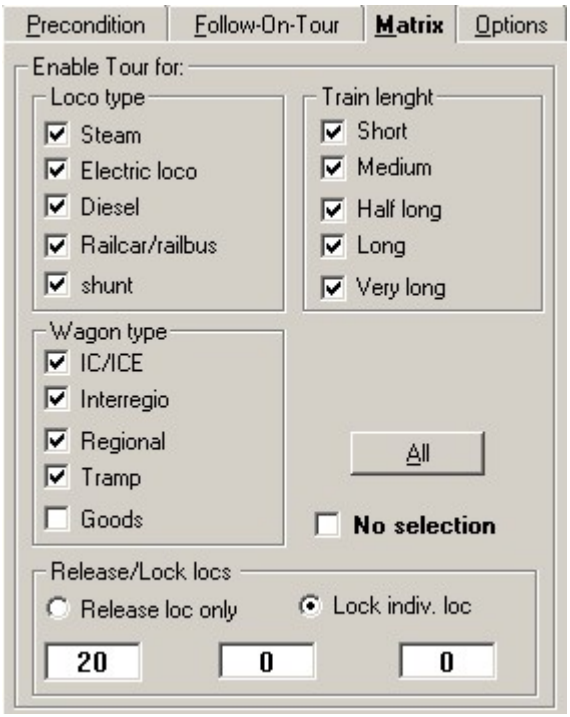
This can be useful for push-pull-trains or when using a turntable or transfer table and you can find many other examples.

Normally the default setting „*Whatever*“ is used.

13.11 The index card „Matrix“

On the index card „Matrix“ you register several additional conditions for the execution of the selected row. But you should remember that you are now working with two matrixes.

- The route matrix according to section **8.9** and
- the tour matrix as described here.



When making registrations on this index card you should always remember your registrations on the index card “Loco type” in the routes editor.

With the selection made in the picture this row of the tour automatic is **not** allowed for Goods and locomotive **20**.

You don’t have to think of any further matrix settings e.g. the route matrix would be used to block this route for all electrical locomotives, because the itinerary of this route has no overhead contact line. Such matrix settings should be made in the route editor, because these settings are global for this route.

The matrix in the tour automatic is mainly take influence on the current playing situation.

Here the radio button, that you use for **locking** trains, as shown in the picture, should be set to „*Lock indiv. loc*“.

Important information!

If you want to lock just up to three locomotive, you have to press the button ***‘All’*** to check all fields of the matrix. A check field in the matrix allows these kinds of trains to use the selected row.

If you enter with selected radio button “Release loc only” one or more locs the “Enable tour for”-selection area will be deactivated and only the registered locomotive numbers will be allowed for this route/tour.

Prerequisites for the matrix check are:

- You have activated the switch “Switch only, if route isn’t locked by special loco/wagon type” in the “system settings / routes” (see **4.10.1**)

- You have registered up to 10 inputs in the text boxes to define your “rolling stock” as described in the system-settings in chapter **4.9.3** (if the default definition doesn’t meet your requirements for your model railroad)
- You have assigned a “loco type” to each loco in the locomotive-database (see **5.1**)
- The digital address of the locomotive must be entered in the train number label of the start contact of a route.

13.12 The index card „Options“

On this index card, you can make some registrations to take individual influence on your automatic operation. Special influence can be taken on the locomotives colour.

The influences of the locomotive’s colour in **WIN-DIGIPET 9.0** are as follows.

If the colour of the train number in the train number display is...

- BLACK, the train can be used in every automatic and the timetable
- RED, the train will not continue driving when using the automatic with demand contacts and also not in all lines of the tour automatic with the symbol (“By Arrival”)
- BLUE, the train will not continue driving when using the timetable and also not in all lines of the tour automatic with the symbols or (“Departure Time”)
- GREEN, the train is actually driving a tour or controlled by the tour automatic.

13.12.1 Colour of loc number at the end of the tour/route

Here you can select whether you want the colour of the locomotive to be switched to BLACK, RED or BLUE at the end of the execution of the selected row. But this change of colour will only be performed if the registered solenoid device in this frame is switched to the desired state. This is a new very elegant way for realising a “Home track”-function.

You can drag the solenoid device with pressed left mouse button from your track diagram to the picture box and release there the button („drag & drop“).
The button will remove the solenoid device.

Important information!
X-Routes used in the tour automatic according to section **8.21.6 don't** switch the locomotive number to red at the end of the route.

13.12.2 Solenoid device switching at tour/route

During the execution of a row in the automatic you can force the program to switch up to 2 solenoid devices, without the need to include them into the used route or profile. This is very useful to switch virtual switches, which have influence on indirect controls of your automatic operation and normally this settings only make sense within the automatic and not when switching the routes/tours manually.

You can drag the solenoid device with pressed left mouse button from your track diagram to the picture box and release there the button („drag & drop"). Afterwards you select with the check boxes whether the switching should be performed at the start (unchecked) or end (checked) of execution of the selected row.

The picture shows an example where a signal is switched to green at the beginning of the execution of the selected row and the button e.g. for the "Home-track"-function is switched to red at the end of the tour/route.

13.12.3 Sound at start of route/tour

Here you can register an individual sound that should be executed when starting the tour/route.

For this purpose you have to check the button „*Activate sound*" and search for a sound on your hard disk/CD-ROM/network by pressing the button **'*Browse*'**.

The button  is used the selected sound for testing purposes.

It is also possible to play the locomotives sound registered in the locomotive database for every locomotive according to section **5.3.2**. This sound can be activated by checking „*Sound from Loc-control*".

The registered sounds will be played when **starting** the route/tour.

13.13 Saving a tour-automatic-file

After the registration of all data, you should save your work. Select the menu command <File> <Save> or click on the symbol in the toolbar of the tour schedule editor.

13.14 Opening a tour-automatic-file

When opening the tour schedule editor the file **edited last** will be loaded and displayed automatically.

If you wan to open another file (*.ZFA), select the menu command <File> <Open> or click on the symbol in the toolbar of the editor.

Select a file and confirm you selection via **'*OK*'**.

You can select the last four files also in the menu <File> without using the normal open-command.

13.15 Renaming a tour-automatic-file

You can rename a changed/unchanged file in the tour schedule-editor. Select the menu command <File> <Save as...> and assign a new file name (see also section **13.3**).

13.16 Creating a new tour-automatic-file

When opening the tour schedule editor the file **edited last** will be loaded and displayed automatically.

If you have never opened the tour schedule editor before, the empty file has the name ??*.ZFA.

If you want to create a completely new file, select the menu command <File> <New> or click on the symbol in the toolbar.

Select now the menu command <File> <Save> or click on the symbol in the toolbar to assign immediately a name to the new file.

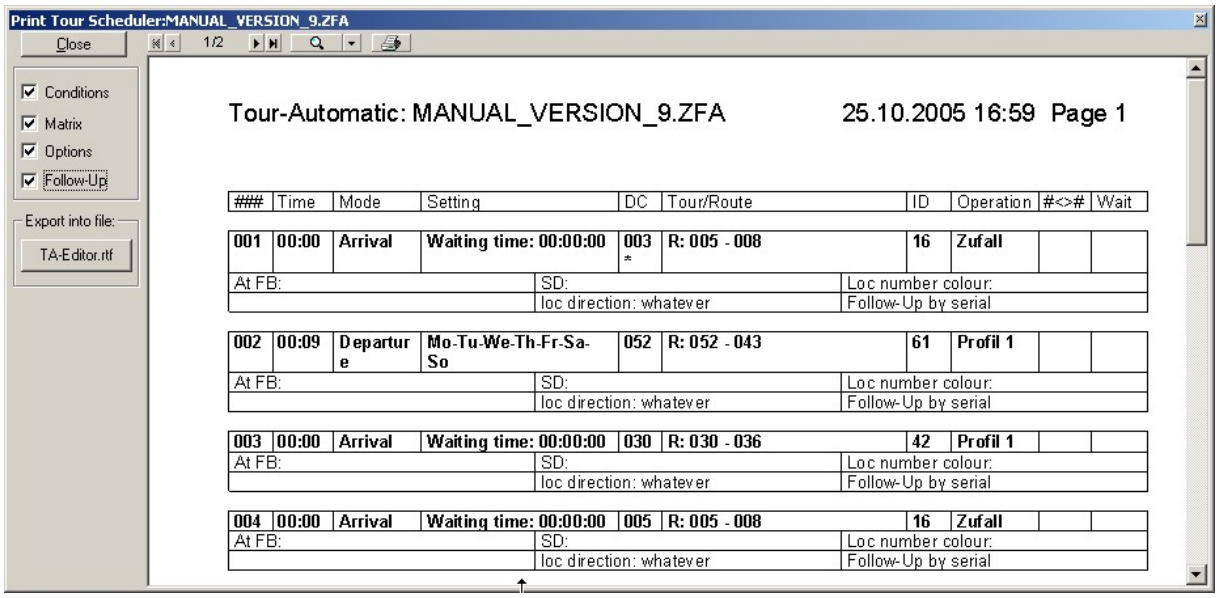
13.17 Deleting a tour-automatic-file

Via the menu command <File> <Delete> or the symbol in the toolbar the actually **loaded** and **displayed** tour-automatic-file can be deleted from your hard disk.

The file will be deleted after a security request.

13.18 Printing a tour-automatic-file

You can also print the **display** tour automatic file. Select the menu command <File> <Print> or click on the symbol in the toolbar of the tour schedule editor, the window „Print tour scheduler...“ will appear.



Here you can select if the conditions, the matrix, the options or the follow-on-tours shall be displayed and printed or not.

Information!
Before printing a file, you have to save, because otherwise the last changes will not be printed.

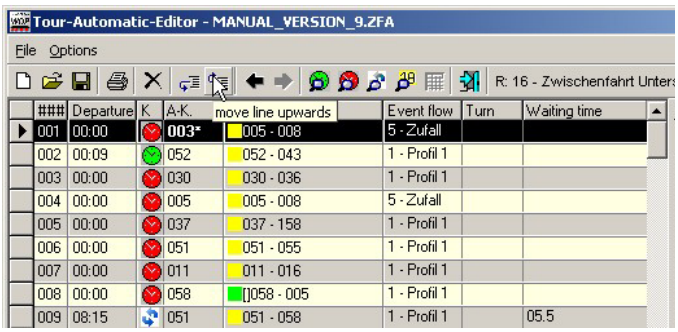
13.19 Sorting/filtering the list

The rows of the list in the tour schedule editor can be moved with the two buttons in the toolbar of the editor.

Select the row, you want to move up and click on the button displayed in the picture.

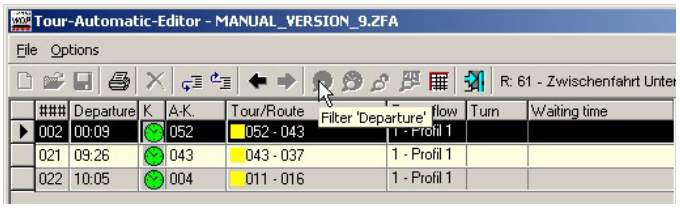
With several clicks you can move the row repeatedly.

With the button left of this you can move the row down.



Important information!
If you have a longer list, the moving process will stop at the top/bottom border of the list. You have to scroll the list before continuing the moving process.

With a click on the symbol or via the menu command <Options> <Filter 'Departure'> you can force to filter the list and then only rows with the symbol are displayed.



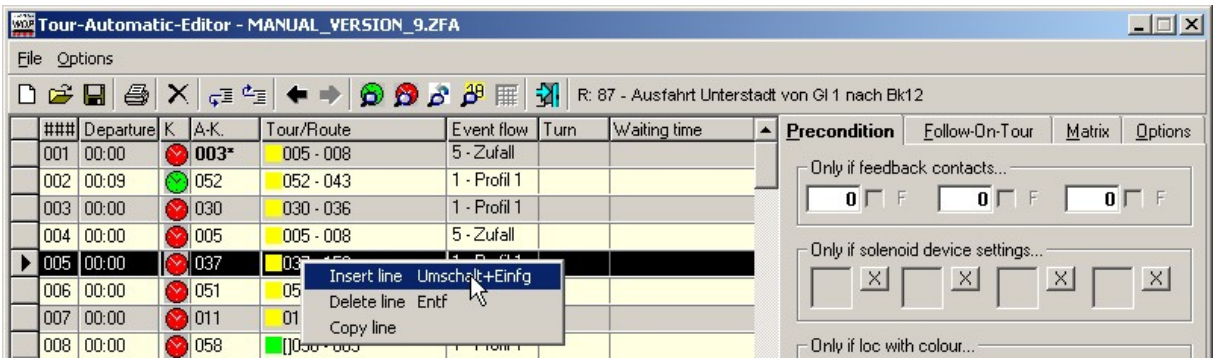
Additional filters are available in the menu <Options>.

If you want to use the filter 'Feedback contact', you have to select a row before, that has this demand contact.

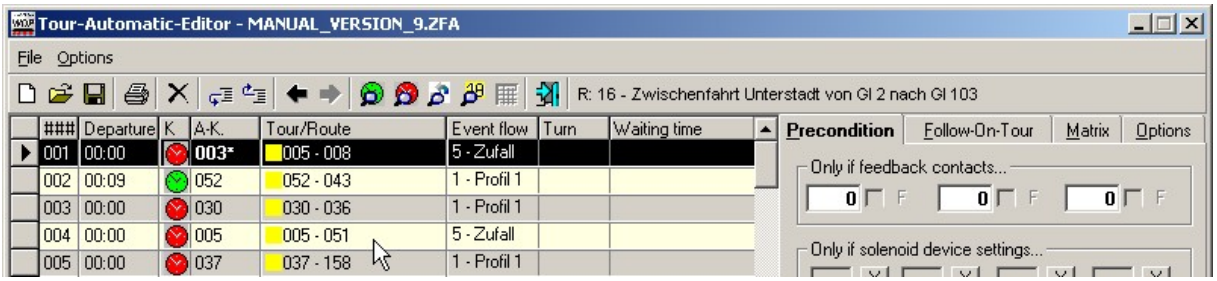
You can restore the original display settings via the menu command <Options> <Show all> or with a click on the symbol in the toolbar and afterwards all rows are displayed again.

13.20 Inserting, deleting and copying rows

Select in the list the row to edit, then open the context menu of the list by a click with the right mouse button. With the first two commands you can insert a new row before the selected row or delete the selected row.

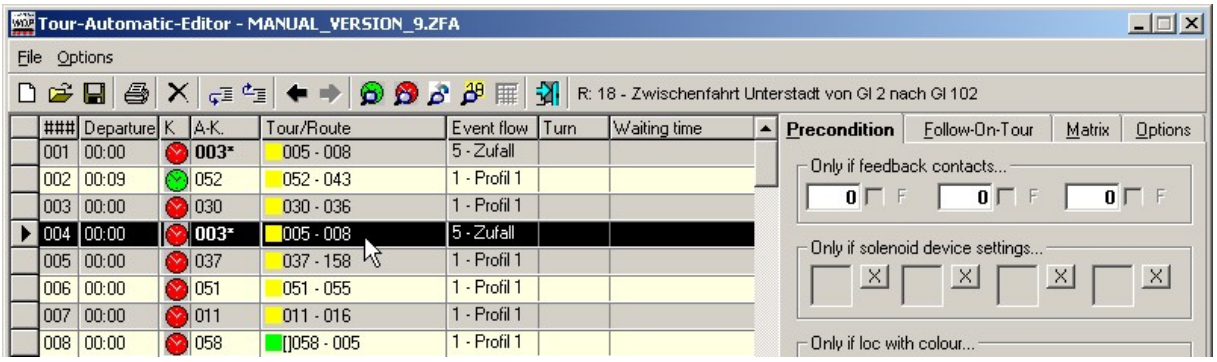


But you can also copy an existing row. When using this function you have to take care of some things as follows.



The row selected in the picture above shall be copied to the row in the list indicated by the mouse cursor, but with overwriting this row. For this purpose select the destination row with a mouse click and insert a new row via the context menu or with the short-cut Shift + Insert.

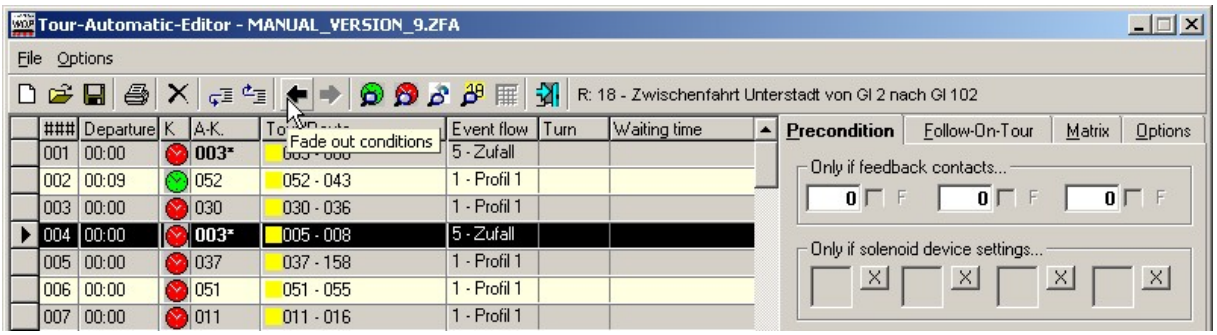
Now select the row to copy, open the context menu with the right mouse button and copy the line to memory via <Copy line>. Then click on the empty and the copied data will be inserted to this row automatically.



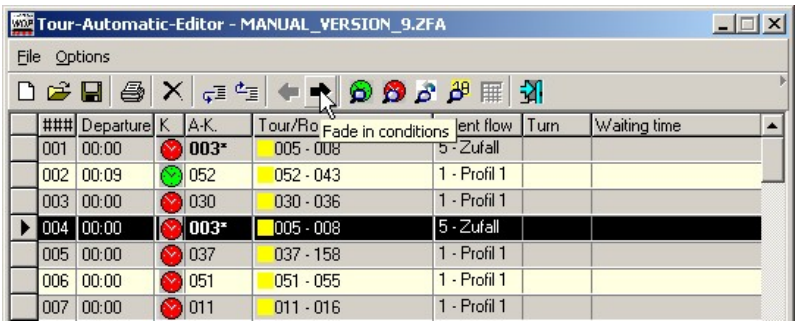
Important!
You have to perform the copy as described above, because when copying and pasting afterwards the selected destination row will always be **overwritten**. It makes no difference if the row was empty or filled with data before.

13.21 (Un-) Hiding preconditions and options

If you don't need the four index cards (preconditions etc.) of the tour schedule editor you can hide them with a click on the button in the toolbar of the editor.



If you want the index cards do be displayed again, click on the reverse button as shown in the picture.



13.22 Miscellaneous options

Via the menu <Options> you have access to following functions.

- **Always display feedback contacts** 

(see **7.4**)
If you want the program to display all feedback contacts in the track diagram **every time** you open the tour schedule editor, select this option.

- **Display solenoid devices addresses** 

(see **7.2**)
If you want the program the program to display all solenoid device addresses registered in the track diagram, you can select this option. Sometimes the addresses can't be read, so you can enlarge the address by pressing the left mouse button over the address (Zoom-Function).

Hint!

If you have checked in the main program the option <Options> <Display info about symbol below mouse pointer > it could be difficult to read the zoomed solenoid device address because of the appearing tool tip. inactive as long as no timetable is loaded.

13.23 Practical tips for usage of the tour automatic

The **WIN-DIGIPET 9.0** tour automatic gives you the possibility - as alternative to the inflexible timetable and the very flexible automatic with demands contacts – to create also an automatic operation on your model railroad layout with functions taken from both automatics. The timetable plans every train operation very detailed and there is no room for variation. This means the timetable can be repeated a thousand times and will always behave same. In contrast to this the automatic with demand contacts is never reproducible in all details, because many decisions in this automatic are random decisions. The tour automatic combines features of the timetable and the automatic with demand contacts. Also the tour automatic should be independent from the used locomotive and because of this an exchange of locomotives is much easier than in timetables.

When configuring a tour automatic you should remember the following points:

- As a rule the start contact of the route/tour will also be the demand contact for the tour automatic
- When controlling your hidden station, the start contact of the route/tour should not be the demand contact for the route/tour, because otherwise the hidden station will empty itself. Here you could use a contact before the hidden station and a train arriving before the hidden station will demand a track to empty itself.
- For realisation of the control of the hidden station you can also use virtual switches. For example the train arriving before the hidden station, will switch it to “green”. The “green” state is used as precondition for the execution of the tour/route for the leaving train and this leaving tour/route will also switch it back “red”.
- Sometimes it is useful to change the order of rows in the tour automatic. The rows of one contact of the tour automatic are checked one after the other, so you can influence the order of checking.
- You should also use the „*Waiting time*“-function, because otherwise your passengers will not have time to leave or enter your trains at the platforms.
- When using repetitions for push-pull-trains on light railways this will cause a very interesting operation.
- You can also use your profiles in the tour automatic, when selecting the corresponded event flow via the radio-buttons. Profiles make for example sense, if you want to play a platform information message/sound before the train will depart.

The tour automatic offers thousands of possibilities for interesting operations. The manual can only give few examples. When you make experiments you will find very interesting ways of automatic operations.

13.24 Closing the tour schedule editor

For closing the tour schedule editor select the menu command <File> <Close> or click on the symbol in the toolbar.

14 – DIGITAL TURNTABLE

14.1 General

This chapter explains how to control the turntable for Märklin Digital HO (ref. no. 7686 and 7286 + 7687) through **WIN-DIGIPET 9.0**. This control cannot be used with other types of turntables and power supply systems.

Please note the operating manual by Messrs. Märklin, particularly the paragraphs on electrical connections for the turntable as well as on correcting mechanical and electrical problems.

Turntable control through **WIN-DIGIPET 9.0** is not only comfortable, but also **saves** purchasing a Märklin keyboard for the turntable.

Before using the turntable you activate the turntable in the system setting on the index card „Program settings - General “ according to section **4.8.6**.

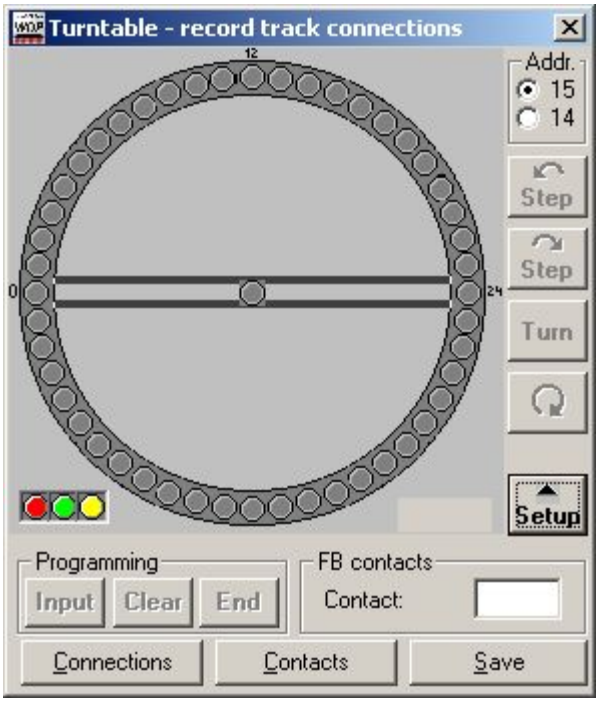
14.2 Keyboard address

Click on <Turntable> in the menu <View> of the main program or on the turntable symbol in the toolbar.

A window with a blank turntable appears with 48 grey, unmarked track sections (spooked tracks), each having a grey circle in the middle. At the right hand side you see 5 command buttons.

In total 48 track connections are possible. Counting of the track connections starts on the left, the horizontal point **00**, proceeds clockwise and ends with **47**.

Opposite **one** connected track there is always **an associated** connected **track**: either a second connected track or a dummy track. Individual connected tracks without opposite connected or dummy track do not exist.



Start by defining the **keyboard** address of your turntable in the upper right hand frame „Addr.“.

This puts the Märklin turntable receiver „electronic 7686“ to the correct function within your system.

Märklin supplies the turntable receivers with a fixed keyboard address no.15 i.e. you operate **one** turntable on your layout.

In this case you need not do anything in the right hand frame: the keyboard address 15 (for the first turntable) is pre-set and checked by the program.

The four command buttons below that frame are deactivated at the beginning. They will be activated after you have recorded and saved your track connections.

Should you, however intend to use **two** turntables, the receiver of the **second** turntable has to be set to keyboard address no.**14 at the Märklin factory**.

First carry out all recordings for the first turntable 15 and click on address no. 14 in the upper right hand frame to record turntable 14. A blank turntable reappears, and you can carry out the recordings for it. You can switch from one turntable to the other by a simple click on the addresses in the upper right hand frame, after both turntables are recorded.

14.3 Recording and deleting track connections

Before using the turntable for the first time and after you have modified, expanded or decreased connected tracks, the positions and numbers of track connections must be recorded.

Click on the switch Setup, and the window is expanded for recording and programming. The title bar of the window reads now „Recording track connections“.

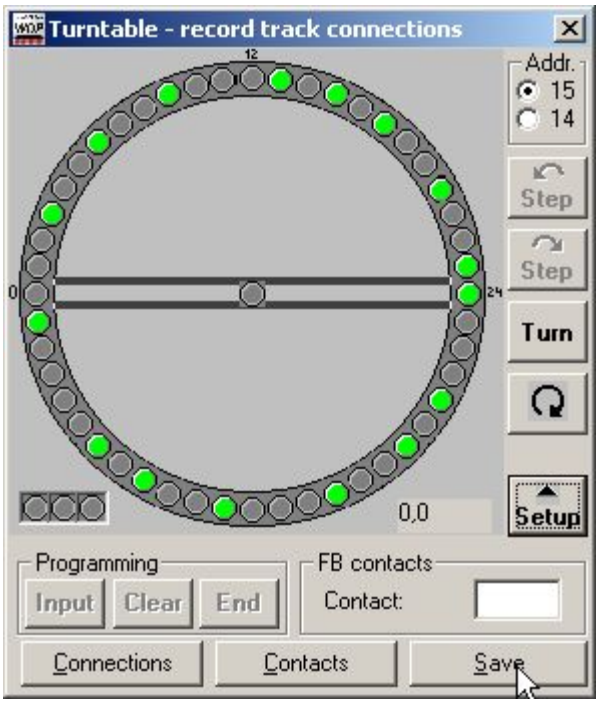
Click on ***'Connections'*** in the lower bar.

Click on the grey circle within the first track connection you want to record: the circle will be coloured green.

In this manner you record all track connections one after another. Dummy tracks may **not be recorded**.

Should you have made a mistake, or should you want to modify your recording, delete the relevant track connection through a click of the right mouse button .

Having terminated your recording, click on ***'Save'***. Your recording will be saved immediately.



14.4 Programming the turntable

Prior to the start of programming, **leave** the turntable („X“ in the upper right hand corner). It needs to be closed once for creating its file. Once more load the turntable (<View> - <Turntable>) and click on Setup.

Programming the turntable is done, using the computer. Click on ***'Input'***. The deck will be shown in the starting position for **WIN-DIGIPET 9.0**.

Pull the **Mains plug** of your layout. **It is not sufficient**, to switch your layout off, using the red button („stop“) on a Märklin controller.

Insert the mains plug and click on ***'Input'*** within 5 seconds. The deck will rotate to the starting position last saved and signals this with a “beep”.

Important for Intellibox users:

The initialisation of the Intellibox lasts longer than the 5 seconds, which have to be used to switch the turntable to programming mode.

In this case you shouldn't switch off all digital power but only disconnect and reconnect the yellow cable of the turntable decoder, a more elegant way is to use a K84-Decoder to switch the turntable decoder on and off by a k84-symbol in the track diagram.

Click repeatedly at 'STEP right' Step or 'STEP' left Step, until the starting position of the deck coincides with the starting position as defined on the screen. After each single step a small window appears. You are asked whether the deck has reached its correct starting position, i.e. the one shown on the screen, or not. As soon as the starting positions of the deck and the turntable graph on the screen are identical, reply to the question by 'Yes', and click on Clear, followed by Input You have now fixed this position.

After that, proceed clockwise '**Step**' by '**Step**' to each recorded track connection (up to max.24) and confirm with Input.

Opposite track connections are automatically included in this programming.

You terminate the programming by End. The screen display jumps to the starting position, the deck of the turntable rotates to the programmed starting position, and a “beep” signals the end of the programming procedure.

At the same time the turntable is saved; you do not need to click on ***'Save'***.

Finally, close the lower window part by a click on Setup. The turntable is now ready for operation.

14.5 Testing functions

You can now check the correct function of the turntable.

With ‘Step right’ or ‘Step left’ moves to the right or to the left from one track connection to the next.

If you click on Turn, the deck rotates 180 degrees according to the direction set.

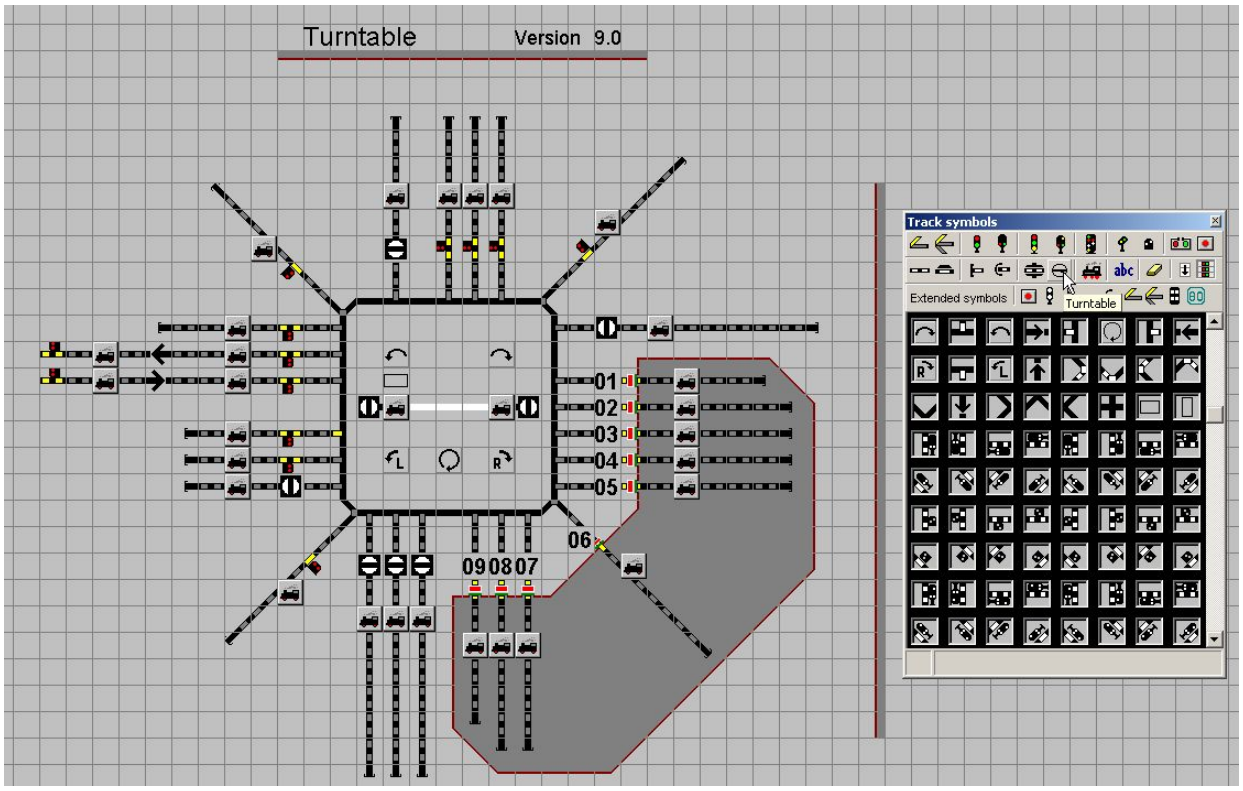
Clicking once or twice respectively at the ‘**Sense of rotation button**’ you determine in which direction the deck will rotate with the turn command Turn. This also applies to direct access to specific track connections.

Click on the circle of that track connection if the deck has to move without a stop to a specific track connection (track **pre-selection**).

14.6 Adding the turntable to your track layout diagram

If you want add the turntable to your track diagram, you have to open the track diagram editor via the menu command <File> <Track Diagram Editor> or with a click on the symbol in the toolbar.

Select the type field „Turntable“ in the symbol selection window. With these symbols you can draw the turntable into your track diagram; the picture shows an example.



In the **extended** symbol selection you can even find symbols for drawing a locomotive shed with sheds-gates (see **6.3.1**).

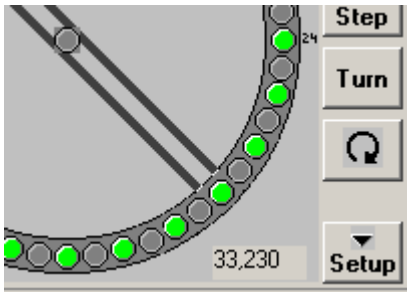
14.7 Addresses of track connections and command buttons

After drawing your turntable in your track diagram, register all track connections registered in section **14.3** to the track connectors in the track diagram.

It is quite simple to get the needed addresses from the turntable-graphic that can be opened also opened in the track diagram editor via <Recording> <Turntable>.

Take care of the following points!

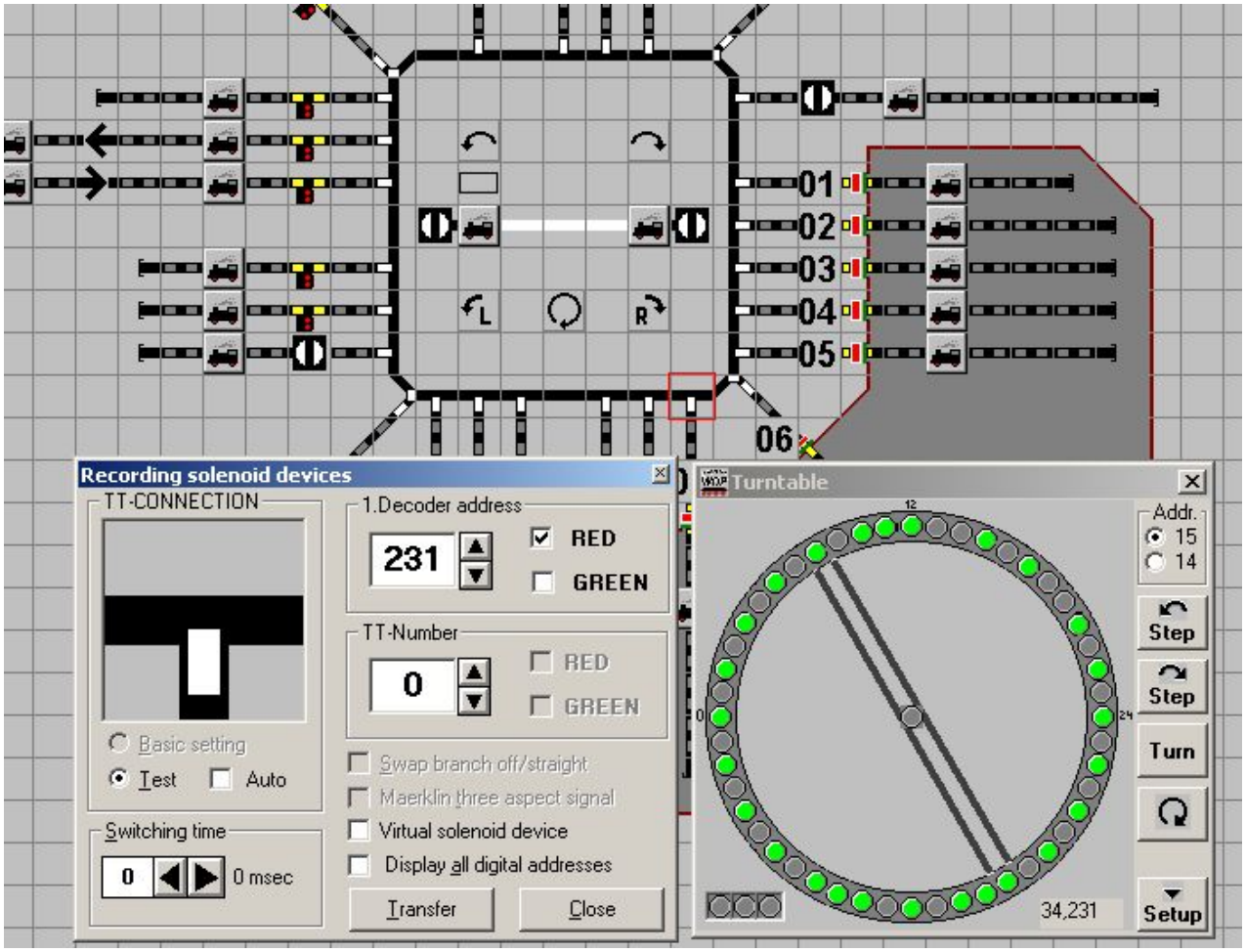
- Every track connector acts as a command button: a click results into an action.
- Your turntable should be programmed in the right way.
- At the bottom in the right of the "Turntable" window, you will see a small display "33,xxx" or "34,xxx" if you move over a connection track or if you click on a command button 33,227 ; "33" means "green", "34" means "red" and the three-digit numbers "xxx" means the addresses, which in theory would be assigned to the Märklin keyboard #15 (address range 225 – 240) or keyboard #14 (address range 209 – 224).



- The command buttons would have the following addresses, for keyboard #15:

'***STEP LEFT***'	= 33.227 (227 GREEN),
'***STEP RIGHT***'	= 34.227 (227 RED),
'***TURN***'	= 33.226 (226 GREEN),
'***Turn RIGHT***'	= 34.228 (228 RED),
'***Turn LEFT***'	= 33.228 (228 GREEN).

For registering of the addresses click in the track diagram editor on the track diagram editor in the same way as if you want to assign normal solenoid device addresses. A window titled "TT-CONNECTION" appears. Registered the address of the selected track connector and select „*RED*" (34) or „*GREEN*" (33) depending on your settings in the turntable window. With '***Transfer***' you can save this data.

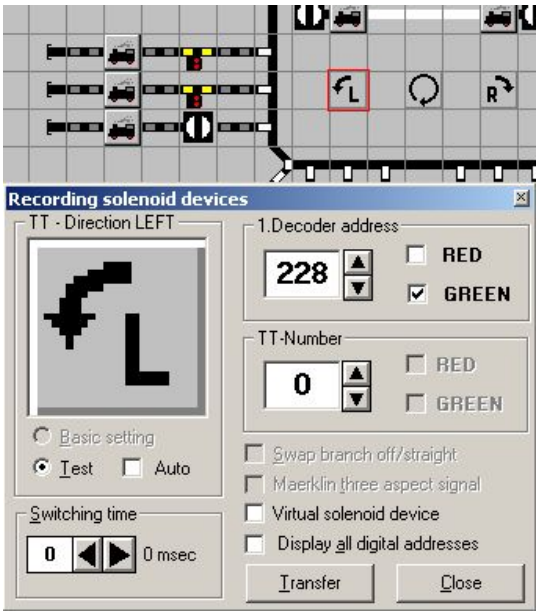


Important tip!

If you have more than one turntable or transfer table in your track diagram you have to assign each of them an **own number** to avoid two-way influences.

From the second turntable or transfer table on, increase „*TT-Number*“ from „***0***“ to the according number (e.g. “1” for the second turntable).

The message „Digital address already exists… “ can be ignored.



Tip!

Check always „*Display all digital addresses*" his will help to see which addresses have already been registered.

For the registration of the command button, you have you just to enter the address, „*RED*“ or „*GREEN*“ is preassigned; You have just to click on ‘***Transfer***’.

After registering all symbols you can control the turntable very comfortable in the main program.

A click on a turntable connector will guide the turntable to this track connector and the selected connector will be marked yellow.

14.8 Possible feedbacks of the Märklin turntable

Using feedback modules, interesting feedback at and around the turntable can be obtained. For this purpose you have to mechanical changes to your turntable in parts. These changes are described in two Workshops downloadable from the WIN-DIGIPET-Homepage (Workshops #10 and #21).

You can have the position of the turntable at each connected track displayed.

The circle of the relevant track connection lights up in **red** when the turntable is at this position, when the turntable is operated on the layout (see **14.9**).

At the left-hand plug connections of the „electronic 7686“ you will find three jacks:

- **B** = track power (+)
- **0** = return (-) for the right hand rail of the track
- **0** = return (-) for the left-hand rail.

You can utilise **one** of both **0**-jacks for feeding back the deck occupation, if you haven't modified your turntable as described in the workshops . Connect to one input jack of the feedback module s88. Click at the centre of the deck and enter the number of the aforesaid s88 input jack in the contact number panel next to „Deck.

The centre of the deck will light up in **red** when a locomotive passes over it, when you selected the operation of the turntable on your layout (see also **14.9**).

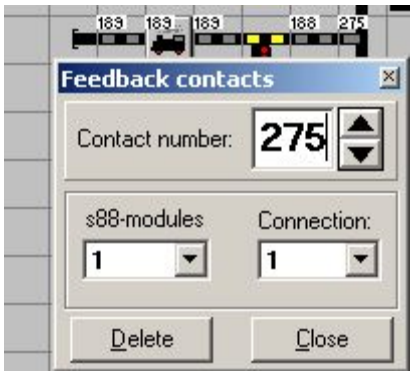
To achieve this, you must, however, remove the return contact springs at the deck and supply digital power to each connected track. (See workshop #10 on the Win-Digipet Homepage)

To monitor the functions of the turntable, the receiver „electronic 7686“ is fitted with jacks i.e. red, green and yellow. You can use these jacks to connect monitoring lights. Connect those to the relevant input jack of your feedback module s88. Successively click on the three grey LED circles at the lower left  . Enter in the contact number panel at the lower right, the number of each relevant s88 input jack next to „LED...“.

With operation of the turntable on your layout (see **14.9**), the three **LED circles** will light up in the appropriate colours.

14.8.1 Registration of the position feedbacks for the turntable in the track diagram

If you have modified your turntable as described in the workshops can realise a real position feedback for your turntable.



The position feedback contacts for each track connector can be assigned in the track diagram editor in the same way as for normal track symbols (see also **7.4**).

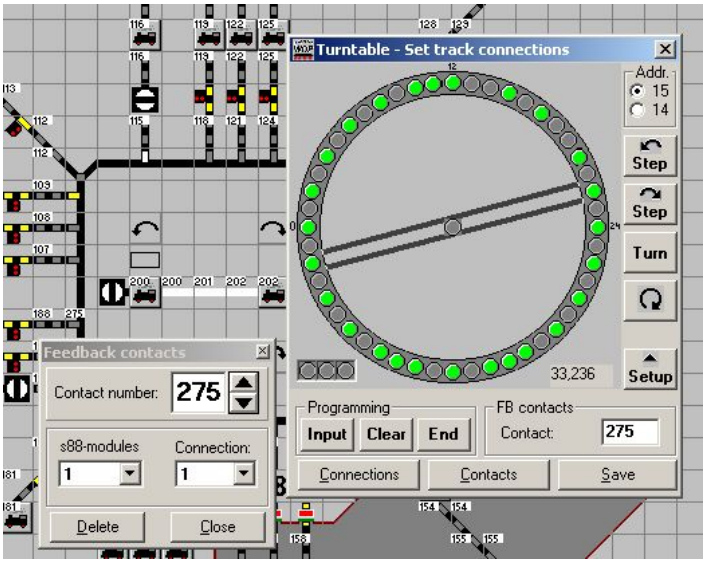
TIP!
Before you continuing with the next section you should not close the feedback assign window but **save** your track diagram to avoid the loss of data.

14.8.2 Registration of feedback modules in the turntable graphic

Select in the track diagram editor the menu command <Recording> <Turntable> or click on the symbol in the toolbar.

Open the turntable setup with the button Setup and click on '***Contacts***'.

Click on an existing, activated track connection (green circle) which is fitted with a contact track. The green circle will be marked by a black triangle, and in the panel „FB Contacts“ appears. Next to „Connection“, the consecutive number of the track connection (clockwise, starting as mentioned above in **14.2**, from left horizontal with „00“).



In the contact number panel to the right the fictitious contact number **0** is pre-set. The correct number is keyed in here.

In the same manner, record all other contacts at track connections of your turntable.

Contact numbers can be modified by overwriting and deleting, entering the number **0**.

Having entered all feedbacks of the turntable, click on ***'Save'***.

14.9 Operating the turntable

Before using the turntable you activate the turntable in the system setting on the index card „Program settings - General “ according to section **4.8.6**.

You can load the turntable through several commands: Either menu <View’ - <Turntable> or with the right mouse button context menu <Turntable> or the symbol in the toolbar.

Operating the turntable is the same as described above in **14.5** – Function test.

Alternatively the turntable can be controlled in directly in the track diagram.

This requires:

- You have draw the turntable into your track diagram as described in section **14.6** and
- made all registrations according to section **14.7** and **14.8**.

The signals shown in the pictures above have not to be physically installed on your turntable, they are just used for locking of routes!

A click on a turntable connector will guide the turntable to this track connector and the selected connector will be marked yellow. This shows you the currently selected track connector.

14.10 Using the turntable within routes

The turntable can be used within routes using its track connectors. In this focus it is important to **not** use the track connectors in the normal route recording, but only in add-on switchings.

You can also use track connectors in contact event lines of the timetables or profiles.

15 – DIGITAL TRANSFER TABLE

15.1 General

This chapter explains how to control the transfer table for Märklin Digital HO (ref. no. 7686 and 7294) through **WIN-DIGIPET 9.0**. This control cannot be used with other types of transfer tables and power supply systems.

Please read carefully the manual of Märklin's, especially the sections concerning the electrical connections of the transfer table and the removal of mechanical and electrical failures.

The transfer table operation with **WIN-DIGIPET 9.0** is comfortable **and** makes it possible to drive the table directly to any track connector.

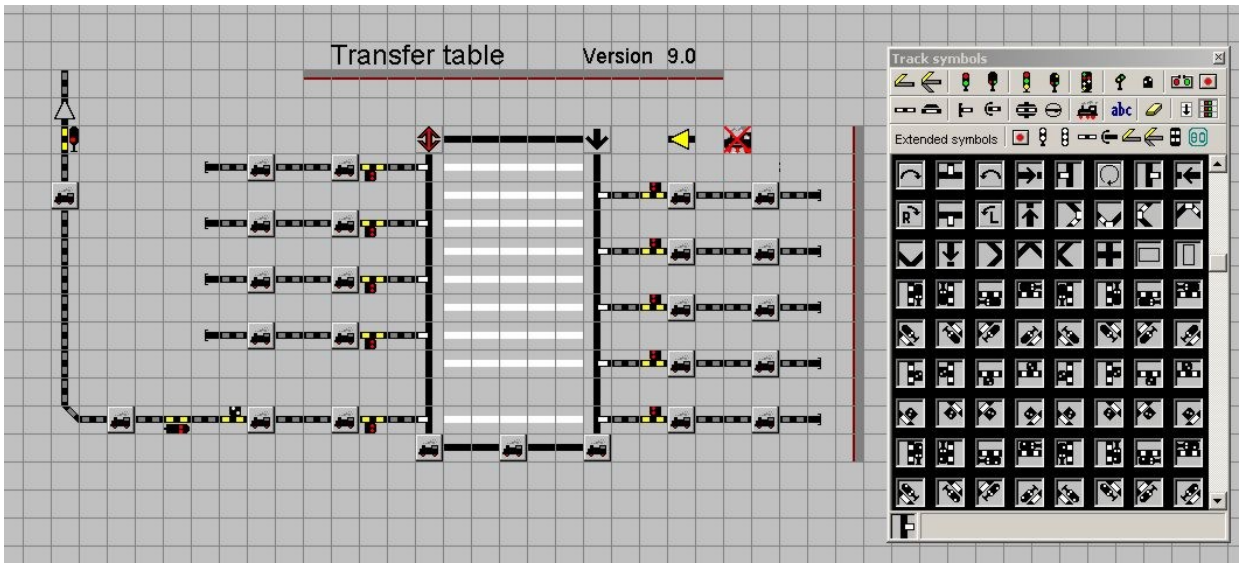
Before using the transfer table, the transfer table should be activated in the system settings on the index card „Program settings - General" according to section **4.8.6**.

The transfer table is control by two switching decoders and one feedback module. The connections to the decoders are described in workshop #17 on the Win-Digipet Homepage, this workshop also describes necessary mechanical and electrical changes.

15.2 Adding the transfer table to your track layout diagram

If you want add the transfer table to your track diagram, you have to open the track diagram editor via the menu command <File> <Track Diagram Editor> or with a click on the symbol in the toolbar.

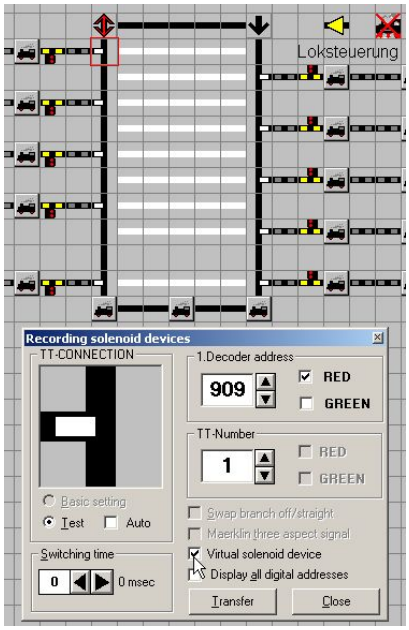
Select the type field „Turntable" in the symbol selection window. With these symbols you can draw the transfer table into your track diagram; the picture shows an example.



In the **extended** symbol selection you can even find symbols for drawing a locomotive shed with sheds-gates (see **6.3.1**).

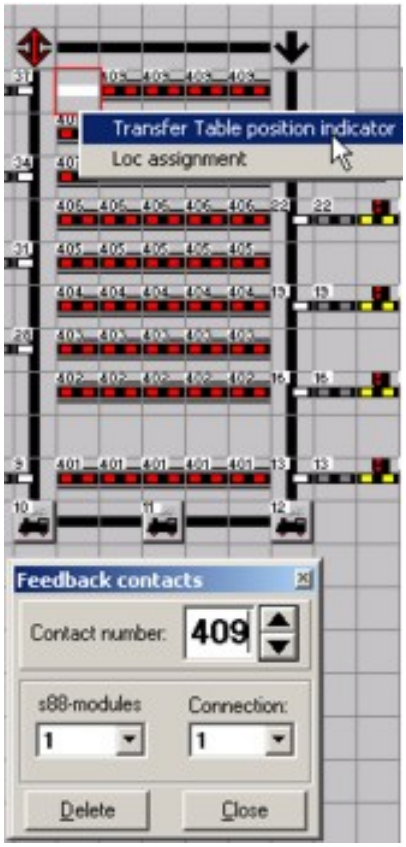
15.3 Registration of the transfer table including addresses in the track diagram

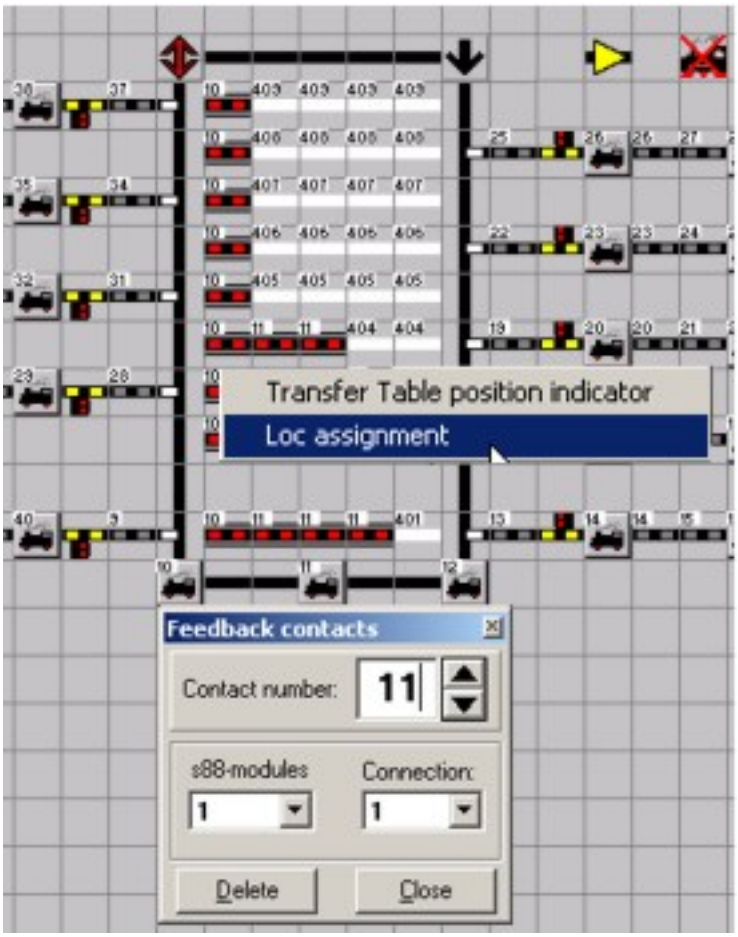
After drawing the transfer table into your track diagram you can now register the addresses and feedback module for the track connectors.



Please take care of the following points!

- Every track connector acts as a command button: a click results into an action.
- The addresses of the two k84-decoders and of the 9 feedback contacts (cabling according to workshop #17) have to be known.
- At first you register the solenoid device addresses of the two k84-plugs (in this example the k84-plug for controlling the direction has the address 16).
- Afterwards the 9 track connectors have to be assigned to solenoid device addresses 901 to 909 in the track diagram editor counted from the straight-threw-track (901). The addresses 901-909 are prefixed by the program and **can't** be changed.
- When assigning this addresses to track connectors should always check „*Virtual solenoid device*“. To keep track of registered addresses you should check „*Red*“ for the left connectors and „Green“ for the right track connectors.
- For the same reason you should also check „*Display all solenoid device addresses*“.
- The message „Digital address already exists… “ can be ignored.
- Afterwards the feedback contacts have to assigned to the 9 possible transfer table positions in your track diagram. This feature offers you the possibility to see the current transfer table position in your track diagram. In the example feedback contact number 401 to 409 have been assigned to the transfer table tracks. In the small selection menu, that appears when you assign feedback numbers to the transfer table track symbols, you have to select <Transfer table position indicator>.





- Now you have to assign also for all 9 transfer table position tracks, the feedback numbers for locomotive occupation. In the small selection menu, that appears when you assign feedback numbers to the transfer table track symbols, you have to select <Loc assignment>.

- At last you should also assign all 10 possible track connector symbols to the feedback contacts for transfer table position.

After saving and leaving the track diagram editor, in the main program the transfer table should indicate its current position. In our example the transfer table is positioned at the straight-threw-track.

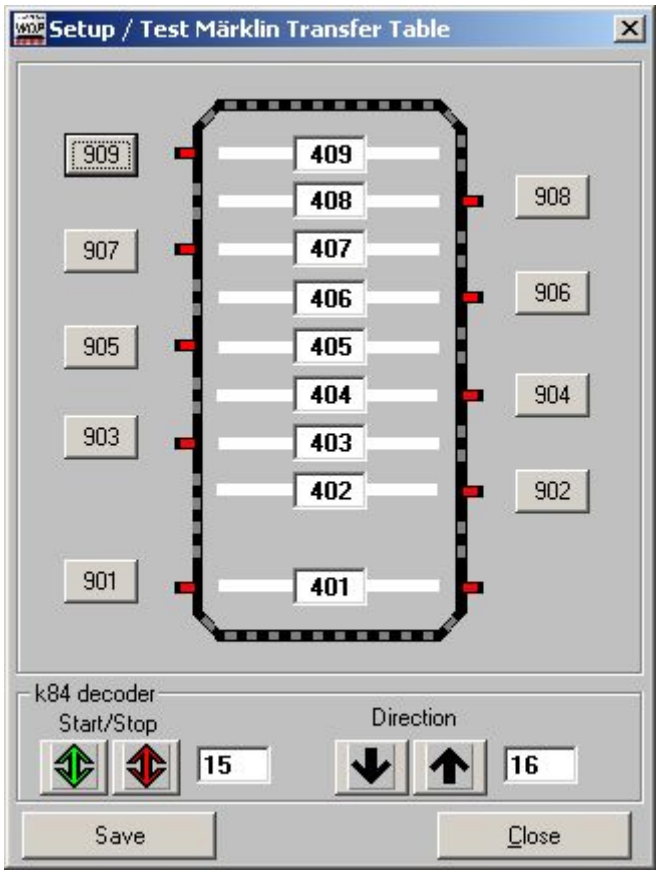
When moving the mouse of the several transfer table symbols, a tool tip shows you all your registered data.

15.4 Data saving

Select in the track diagram editor the menu command <File> <Save> or click on the symbol in the toolbar.

15.5 Transfer table setup

The transfer table setup requires, that you have assigned all position feedback contacts and solenoid devices correctly to the track symbols in the track diagram editor.



Before using the transfer table setup, the transfer table should be activated in the system settings on the index card „Program settings - General“ according to section **4.8.6**.

Afterwards you can open the transfer table setup via the menu command <Extras> <Märklin Transfer table> or with a click on the symbol in the toolbar.

In the setup/test window you can assign the solenoid device addresses of the two k84-decoders as in the track diagram editor and also the 9 position feedback contacts. Confirm your registrations afterwards with **'*Save*'**.

Now also this window should display you the transfer table position.

Now press one of the 9 push-buttons and the transfer table will move to the selected track connector.

If the transfer table moves to the wrong direction when making your first tests, you have to reverse the connectors of the direction-k84.

Important!
After every change in your track diagram, the transfer table setup has to be reopened and saved one time.

15.6 Leaving the transfer table setup

After leaving the transfer table setup via **'*Close*'** the transfer table can be moved to all track connectors with a simple click on one of the track connector symbols.

16 – CRANES IN WIN-DIGIPET 9.0

16.1 General

With **WIN-DIGIPET 9.0** you can control the cranes of Roco, Märklin and Trix.

The following cranes are supported:

- Roco Portale-Crane
- Roco Crane-Wagon
- Märklin Goliath
- Märklin Crane 7651
- Märklin Portale-Crane 76500
- Trix Portale-Crane 66105 (similar to Märklin 76500).

The cranes of Märklin use the Motorola-protocol only and the cranes of Roco uses either Motorola or DCC decoders (different order number).

IF you own a crane with a digital-decoder (or even up to five digital cranes at the same time), this is a very nice feature for your model railroad.

Even for people, who don't own a crane this chapter is interesting, because also macros for locomotives can be recorded, that can be executed manually, by the timetable or by profiles. The advantage of macros is that you have not limits because of routes and start/stop-commands.

When controlling locomotives by macros you can realise really nice shunting actions and you have even the possibility to use one destination contact for more than one locomotive. This is normally in possible in **WIN-DIGIPET 9.0**.

The same can be said for functionality models (e.g. carousels) or other digitally controlled models that can be registered as locomotive in the locomotive database.

In the following sections the control of the Roco Portale-Crane is described. The other cranes can be controlled accordingly.

16.2 Registering a crane in the locomotive database

The first thing you have to do is to register the crane in the locomotive database. The registration process in the locomotive database is described in chapter **5**.

Pictures for the cranes can be downloaded from the "Download"-area of the Homepage of Win-Digipet. Download this picture to the folder C:\WDIGIPET\EIGENE. After downloading this pictures can be used in the locomotive database via „Custom pictures".

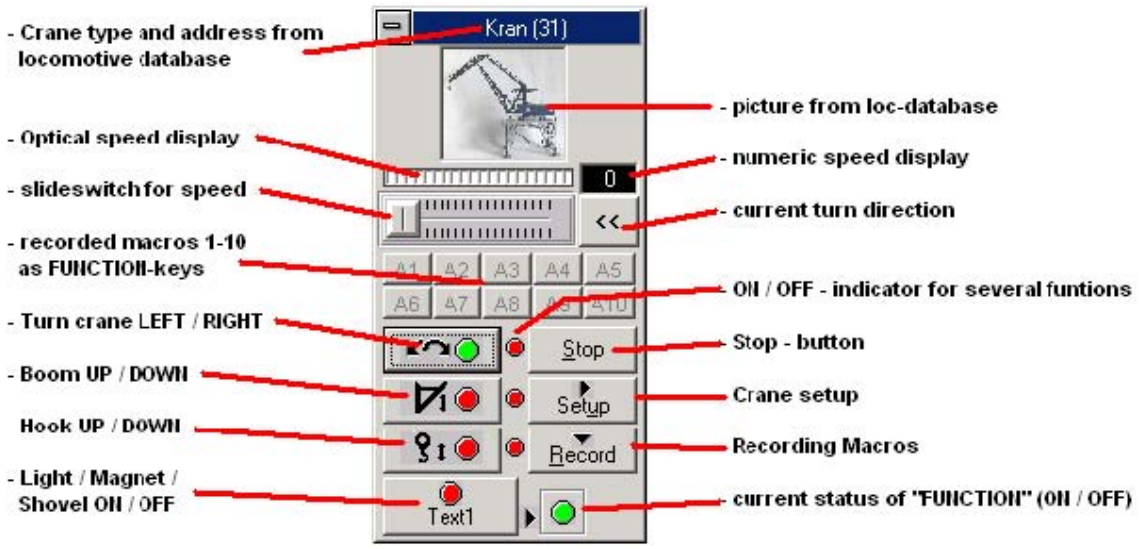
You also to register the digital addresses of the crane in the locomotive database. For the Märklin Portale-Crane these addresses are fixed by the decoder to 73 and 74.

16.3 Crane-Setup

Before using the crane the locomotives have to be registered in the locomotive database (see **16.2**).

Afterwards you can open the control for the Roco Portale-Crane via the menu command <Cranes> <Roco Crane> or by a click on the symbol in the toolbar.

If you use another address than 30 in the locomotive database an error message will displayed, that can be ignored.



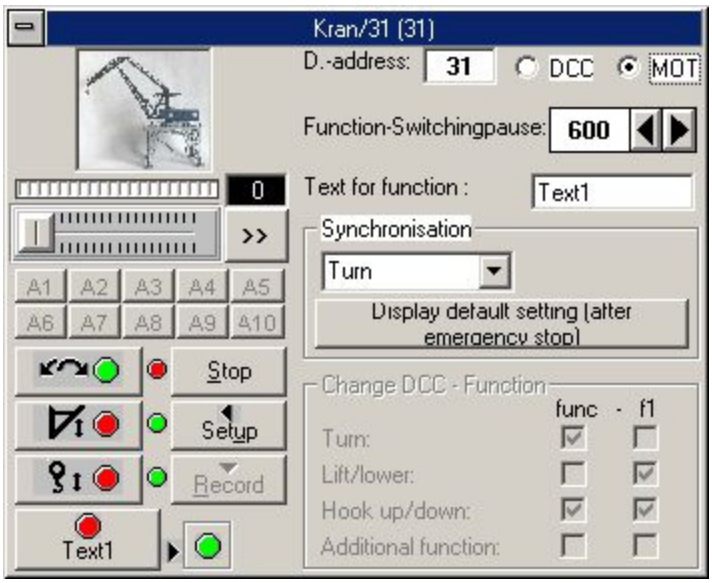
16.3.1 Crane-setup Motorola

Click on the button '***Setup***'.

Inside the *Setup*-window please enter the digital address (31 in this case) and select the digital protocol Motorola.

If you enter an address that has not been registered in the locomotive you will receive an error message. If you have entered a correct address automatically the picture from the locomotive database will be displayed.

For the Märklin cranes no further setup has to be performed.



The next step is to adjust the *Function-Switching-Pause*, which is needed for the crane to switch through the different functions in sequence. Unfortunately this is design intend for Roco cranes with Motorola decoders. The use of the different functions directly is not possible with the Roco cranes (Status June 2003). During our several test sessions we recognised that Roco cranes react in very different ways. Therefore vary the waiting time, to find the optimal settings. Do not set the delay times too short, because then it might happen that **WIN-DIGIPET 9.0** sends the commands too fast and the crane "slips" some of them. If the values are too high, it could possibly happen that some of the commands will be processed in the opposite direction. A value of about **600ms** has been proven successful (in above example the value is adjusted to 400ms).

The next step is to define and enter a text for the function-button, because the crane has a hook, a magnet, a light or a shovel (shovel and magnet are optional) for disposal.

Below the text-field you find the area for synchronisation (*Display default setting after emergency stop*). *Default* for this model is the function "*raise/lower*" and "*right/up*". This means after every switch-on of your model railroad or after an *emergency stop* (always after power was switched off) is this the default setting which the crane will start with (it will forget anything). So you just need to change these parameters if a change occurs during operation which should be compensated by this.

Please keep in mind that after EACH "emergency stop" and after each powerless session the Roco-crane will ALWAYS change to status "*Raise/Lower*" and „*Right / up*".

16.3.2 Crane-setup DCC

Click on the button '***Setup***'.

Inside the *Setup*-window please enter the digital address (31 in this case) and select the digital protocol DCC.

If you enter an address that has not been registered in the locomotive you will receive an error message. If you have entered a correct address automatically the picture from the locomotive database will be displayed.

The setting *„Change DCC-Function"* is now activated and the setting *„Function-Switching-Pause"* is deactivated.

The next step is to define and enter a text for the function-button, because the crane has a hook, a magnet, a light or a shovel (shovel and magnet are optional) for disposal.

Below the text-field you find the area for synchronisation (*Display default setting after emergency stop*). *Default* for this model is the function "*raise/lower*" and "*right/up*". This means after every switch-on of your model railroad or after an *emergency stop* (always after power was switched off) is this the default setting which the crane will start with (it will forget anything). So you just need to change these parameters if a change occurs during operation which should be compensated by this.

Please keep in mind that after EACH "emergency stop" and after each powerless session the Roco-crane will ALWAYS change to status "*Raise/Lower*" and „*Right / up*".

The last setting is *"Change DCC-Function"*. Roco has delivered different DCC decoders with different functions *(„FUNC" or „f1"*). To compensate these different model-variants you may configure the possible features via *„FUNC"* or *„f1"* as required. Please refer to the instruction manual of your Roco-DCC- Crane.

16.4 Closing the crane setup

After making all settings you can close the crane setup and make first test.

The data of the crane is stored in a setup file in the Win-Digipet folder.

TIP!

Therefore please use the switch "*Display default setting after emergency stop* " after EACH emergency stop or in any case when the crane has been without power to ensure that the functions of WDP are in sync with the crane.

16.5 Recording crane macros

Via the „*Record*"-button you get to the macro recording section.

With „*Start*" (Start) the recording begins (then the text of the switch-button will change to „Stop").

Then please proceed all required moves manually. All corresponding commands and times will be indicated in the status window and will be recorded. To change the direction, you have to push the "Stop"-button before. Be sure not to mistake to „Stop-Button" for the „Record-Stop-Button".

Via "*Record-Stop*" (Stop) you finish the recording.

Within the text-panel in the bottom you may enter an individual name for this macro. By pushing one of the ten macro-buttons you will save your crane-macro. The macro-buttons in **bold** already contain a macro. If you push one of the buttons in **bold** nevertheless the already existing macro will be overwritten.

Via „*Test-Play*" you are able to test the recorded macro directly as long as the recording window is still open and the command chain is still visible in the status window. If you are satisfied with your record, close this section again and the macro will be available via a functions-button (A1- A10) and may be activated at anytime you want manually or via the timetable-operation.

With further macro-recordings please proceed as described.

16.5.1 Tips concerning crane-macros

You think of some points when creating macros:

- Before you start to record a macro moves the crane ALWAYS to a defined and fix position! Example: Default function setting as it is when you switch on power, direction 180 degrees to the tracks, hook up, boom down (or whatever you'd prefer), because the macro will always process like you have recorded it – in relation to the current position and setting. In case your macro starts first to raise the hook for 10 seconds, but the hook was already at the highest position at the beginning of the macro, then there will be no feedback and WDP starts to process to raise the hook again.
- It would make sense when a macro ends in the same setting and direction as it started, to e.g. replay a macro several times. Alternatively the first macro ends in a position which is the starting position for another macro to build a kind of macro-chain. The current direction and activated functions are indicated via the red/green "LEDs" next to the corresponding function-buttons (Roco with Motorola-Decoder). For the DCC-protocol GREEN / TURN and the arrow (>>) to the right is the default setting. Please pay attention also for DCC, that BEFOR you start a macro, the crane is always in its default position and synchronised with the crane-control
- Don't try to record too *precise* macros (precise by millimetre) ! The cranes do not send any feedback about their current status or condition back to **WIN-DIGIPET 9.0**, this means everything is controlled by time. But also in this stage we are far away from any "Suisse-Precision", because the crane-motors don't stop immediately, so that after multiple replay of the same macro the crane will get more and more out of range and the result will be, that the crane puts its load right beside a lorry.
- Very well works, when you e.g. have a "huge" junkyard (incl. small cars with build-in magnets under the roof) and you record the macro in a way just to turn the boom to pick up a car and turn again to put it somewhere else. You can use this kind of macro nearly endlessly to e.g. "empty" your junkyard.
- Please always pay attention to the security regulation of the manufacturers, to avoid that conductive or flammable parts are able to fall onto the tracks!
- During operation of a macro all other command-buttons of this crane control are disabled except the stop-button. By means of the "shining LED" of the crane-control you may notice that a macro is still in progress. If you want to stop a macro for any reason just push the stop-button. Please keep in mind, if you then want to restart a macro, this macro will start from scratch, but at the current position!!! Therefore you must bring he crane into its default position before and you have to reset the switching to its default setting as well which is given for any new start!

16.6 Using crane macros in WIN-DIGIPET 9.0

It is very comfortable and easy to implement macros in **WIN-DIGIPET 9.0**! You can call macros in conjunction with contact events, similar to event-controlled switching of solenoid devices. Certainly you can also implement the powerful timer-control to start macros e.g. with an adjusted delay.

You can use the crane macros in **WIN-DIGIPET 9.0** as follows:

- Manually using the buttons A1 to A10 of the crane control
- Automatically in profiles.
  For further details see **10.3.5**
- Automatically in timetables.
  For further details see **11.2.7.**

16.7 Deleting crane macros

You are able to delete macros within the open recording-window, by clicking the right-mouse-button onto an already recorded (**bold**) function-button. **WIN-DIGIPET 9.0** will ask you, if you really want to delete this macro.

17 – INFRACAR SYSTEM WITH WIN-DIGIPET 9.0

17.1 General

The model car from the Faller Car System or from Mader could be already controlled with WDP. However, now the InfraCar system by Karsten Hildebrandt is implemented.

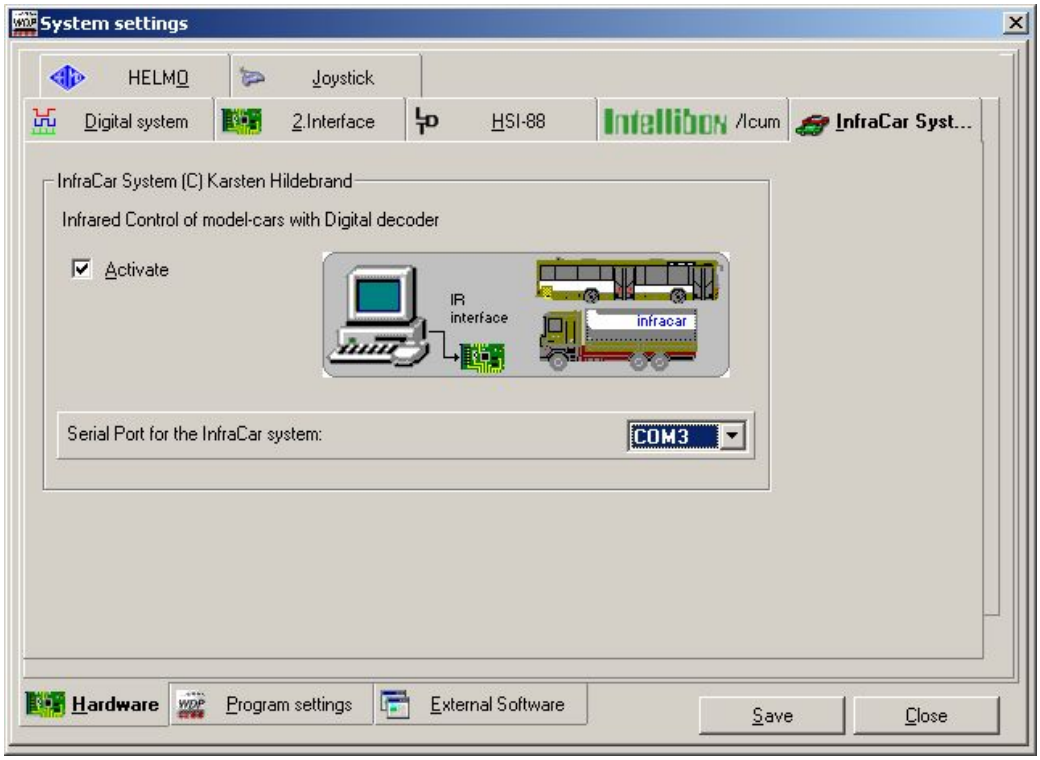
The known systems of Faller and Mader know e. g. only two speeds "stop" or "full speed".

The InfraCar system sends the following commands via infrared light...

- Acceleration / braking
- automatic stoplight
- variable speed regulation
- and up to 6 switch functions (e. g. Light, indicator, blue light)
- if a suitable decoder is installed in the car/truck.

With this similar operations as with a normal model railroad are possible. Therefore the functions which you know from the model road control can be used with the InfraCar system.

17.2 Settings for the InfraCar system



Before you can use the InfraCar system, you must activate it in the system settings on the tab „ Hardware - InfraCar system “ (see **4.5**) first *"Activate"* and the "*Serial port for the InfraCar system* “.

17.3 Registering cars in the locomotive's database

Next you register your cars like locomotives in the locomotive's database. There you also find a decoder type for the InfraCar system.

You carry out the entries analogously to the locomotives according to **chapter 5**.

Of course you can use addresses which you already use for locomotives, because **WIN-DIGIPET 9.0** "notices" that it concerns not locomotives, but cars. Besides you can use up to 6 special functions (if available).

17.4 Functions for the InfraCar system

If you have installed and configured the InfraCar system, all functions known for locomotives and automatics are also available.

The "street" must be drawn similar to "rail tracks" in the track diagram.

Moreover the following symbol tables are available to you;

- Only streets icons for auto layouts **Sym_Auto**
- Track and street symbols **Sym_Auto_Bahn**
- User symbols **Sym_U**

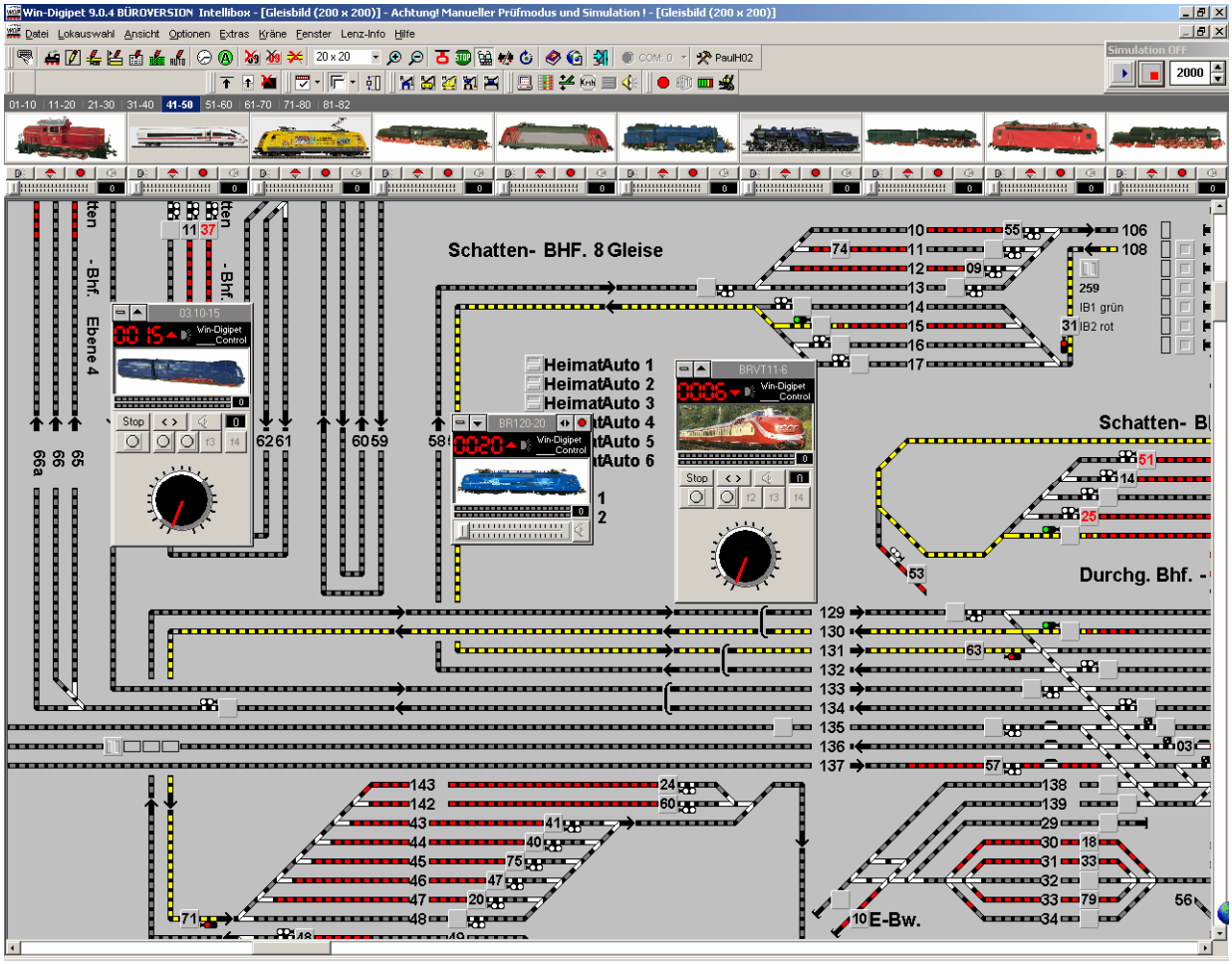
You can select the desired symbol table in the system settings according to section **4.8.5**.

18 – MODEL RAILROAD OPERATION with WIN-DIGIPET 9.0

18.1 General

By now you have recorded all individual data of your Digital model railroad, created the track diagram, determined the routes, profiles and tours and made the recordings for the operation according to timetables, automatic operation, using demand contacts or the tour automatic.

Thus, the prerequisites are satisfied and you can comfortably and efficiently control your layout through **WIN-DIGIPET 9.0**.



In the **WIN-DIGIPET 9.0** track diagram, your easy-to-handle command centre, you switch and control your model railroad.

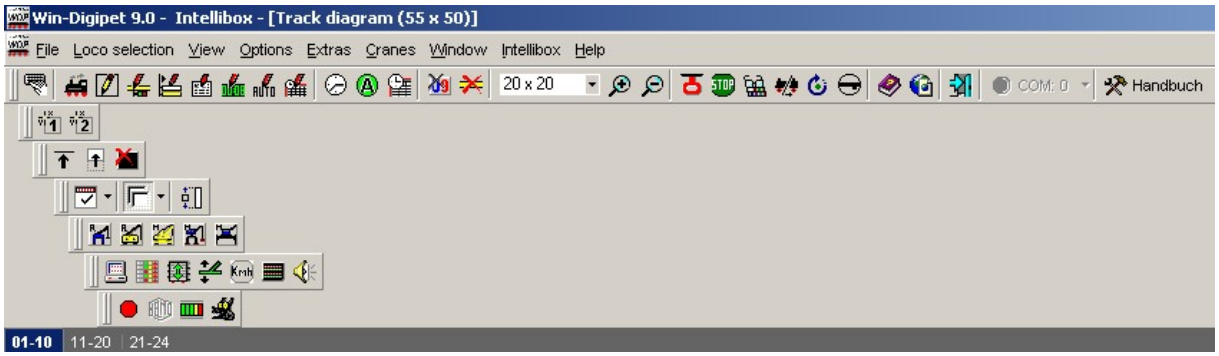
In this chapter **18** all control functions and their handling in the model railroad operation are presented. References to other parts of this manual are made (**xx.xx**) to details already given in chapters **4** to **17**.

When you start WIN-DIGIPET 9.0 your track diagram is loaded automatically, and you are in the main program.

You see everything as you left it after your previous session:, the zoom factor (**6.2.4**), the loco control panels (**5.10.1**),.

- the size of the track diagram **(6.2**)
- the track diagram displayed using the selected symbol table (see **4.8.5** and **6.3.2**)
- the zoom factor (**6.2.4**), ready to use
- the loco control panels (**5.14**)
- and the position of the locomotives selection (see below under **18.11.1**).

In **WIN-DIGIPET 9.0** seven standard toolbars are available:



These are ...

- the main toolbar
- the toolbar for a quick selection of screen sections
- the toolbar to operate the loco controls
- the toolbar for changing the loco bar
- the toolbar for selecting cranes
- the toolbar for extra
- and the toolbar for external hardware.

Also user defined toolbars can exist. A detailed description was presented in **3.7**.

Toolbars are either visible or not, depending on the settings.

18.2 System settings

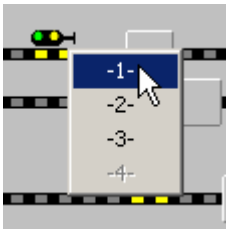
You can access the system settings via <File> <System settings> or switch in the toolbar. This program part is described in chapter **4**. Whilst you control your model railroad, you can make changes in the basic system settings.

Tip!
When using the LDT HSI-88 you should reinitialize the HSI-88 after leaving the system settings to avoid wrong feedbacks.

18.3 Switching individual solenoid devices

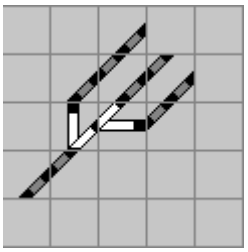
Point the mouse pointer in the track diagram at the solenoid device you want to switch: the mouse pointer changes to a hand. Press the left mouse button as often as necessary until the desired position of the solenoid device is reached.

Three-way and double- slip turnouts may require three or four clicks. You can switch an unlimited number of solenoid devices successively.



When switching signals with three or four aspects, you can open a context menu with the right mouse button and select the desired state directly.

The switching position of solenoid devices with equal addresses – for example: Two signals at the same decoder input –will automatically be synchronised at the track layout.



If you have represented three-way turnouts in inclined position in the track diagram by one vertical an d horizontal normal turnout (**6.3.4**), each with its own address, you should ensure that both turnouts are switched to „straight“ prior to any “branch” switching (**7.2**).

18.4 Basic settings of the solenoid devices

<Options> <Execute basic settings> or switch in the toolbar, switches all solenoid devices to the basic settings determined in the solenoid device recording (**7.2**).

Via the menu command <Options> <Execute current switching> all solenoid devices are switched to the settings displayed in the track diagram.

These functions are always useful if want to switch your solenoid device into a determined state for example after manual intervention.

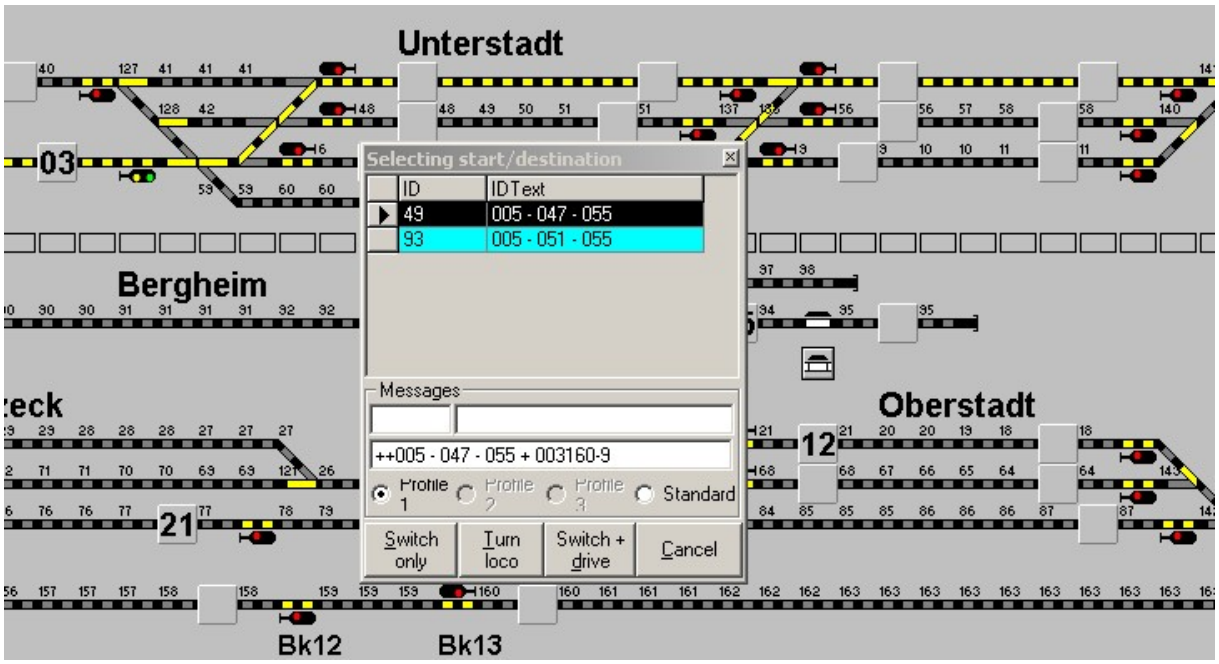
18.5 Switching of routes

In **WIN-DIGIPET 9.0** routes can be switched manually or automatically. The timetable, DC operation or the tour automatic will only switch routes, where all switching conditions are fulfilled.

18.5.1 Using Start/Destination function

Click with the right mouse button on the **starting** point of the desired route and again with the right mouse button on the **destination** point (**starting** contact, **destination** contact).

The window „Selecting start/destination“ appears. All routes that the system found are displayed in a list, with their ID text and their internal ID number.



In this example the program has found two routes.

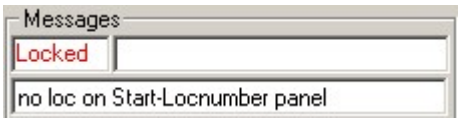
The following „Messages“ are possible...

- „No route found!“,
  if the desired itinerary is not registered as route

- Warning because of crossing routes
  the ID-Text and ID-Number of the crossing route is displayed

- and warnings because of locked routes
  - because the route is not free e.g. caused by an occupied contact

  - because there is no locomotive on the start contact



  - because the route is not free caused by a destination train number display that is occupied by a locomotive number.

- This message says, that everything is OK.

Now select the desired route from the list; the route appears in yellow and blinking, this means „Ready for switch“. The button **'*Switch + Drive*'** will be enabled automatically, if a locomotive number is registered on the start contact. Details concerning the train number display are explained in section **18.14**.

In our example the locomotive 03 is registered on the start-train number display.

For this locomotive is for this route 005 – 047 - 055 also a profile available and because of this you can choose between „*Standard*“ and „*Profile 1*“.

You can choose between two options:

- **A)** Click on **'*Switch only*'**; the route will be switched and stops blinking und can drive **manually** along the route with a train/locomotive.
  For this purpose you can control the locomotive with the control panel of your digital system or with a **WIN-DIGIPET 9.0** locomotive control.
- **B)** If the button **'*Switch + Drive*'** is enabled, because of a registered train number on the start contact, so you can now also choose between several driving options:
  - 1. You choose *“Profile 1”.*
    Then the locomotive will start running **automatically** when clicking on **' *Switch + Drive*'**. The values for the starting speed and the further driving behaviour will be taken from the profile registered for this locomotive/route-combination.
    As soon as the locomotive has reached the destination contact, the locomotive will be **stopped automatically**.
  - 2. You choose not „*Profile 1*“, but „*Standard*“. The values for the starting speed and the further driving behaviour will be taken from the locomotive and route database. **A prerequisite** is a starting speed greater than **0** (see **5.5.2**) in the locomotive database.
    If you have defined a braking contact, you should also take a look at section **8.7.3**. As soon as the locomotive has reached the destination contact, the locomotive will be **stopped automatically**.

In operation mode **A)** and **B)** no powerless tracks are required before signal etc.. All locomotive movings are controlled by train numbers and feedback contacts.

In both operation modes - **A)** and **B)** – warning messages will be displayed, if the selected route is not allowed for the locomotive-/wagon-type/length of the train registered on the start train number display (see also **4.9** and **8.9**.

But you can force to use this even if this message is displayed by clicking on **'*Switch + Drive*'**.

But be careful with this, because an unallowed train is now using this route.

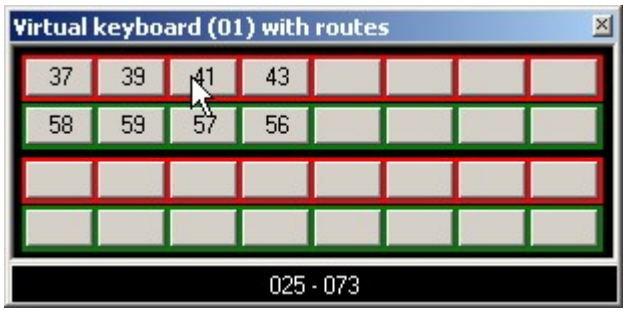
As soon as the locomotive has reached the destination contact (fulfils the release condition), the route will be deleted from the screen.

According to your setting on the index card „Program settings – Locomotives“ in the system settings, the click on **'*Switch + Drive*'** will also cause the control of the locomotive from the start contact to be opened automatically and closed automatically when reaching the destination contact(see **4.9**).

18.5.2 Using virtual keyboard

The most frequently used **32** routes can be switched extremely fast; the preparations are described in **8.12**.

Click in the menu on 'Options' - 'Virtual keyboard with route assignment' or on the switch in the toolbar.



The virtual keyboard appears.

Point to the command key with the ID number of the route you want to switch: Its description is displayed in bottom display line.

Click on the command key.

The route is switched, if all the switching conditions are met and checked. If not, a message will be displayed.

Hint!
You have to control the locomotive manually in this mode.

18.6 Quick deletion of routes

You delete all routes...

- by the short menu of the right mouse button, selection: <Delete all routes>
- or by the function key **F7**
- or by the menu <View> <Delete all routes>
- or by the switch in the toolbar.

This function deletes all switched routes (just at the track layout, of course NOT in the routes editor) and resets the release conditions of the active routes. This means, all eventually locked solenoid devices will be released again.

Sometimes you can use this function as a test function, if – for example – it has come to a stop during the automatic by demand contacts operation.

If the automatic mode operates fine again after using this function, the error was caused probably by one or more solenoid devices, which were not released by a release condition of a route. Because of this, you should check the release condition and route records in the routes editor.

You delete an individual route by clicking twice successively with the right mouse button on the start-and-destination function, followed by a click on ***'Cancel'*** in the window „Selecting Start/destination" (tours see **18.7.3**).

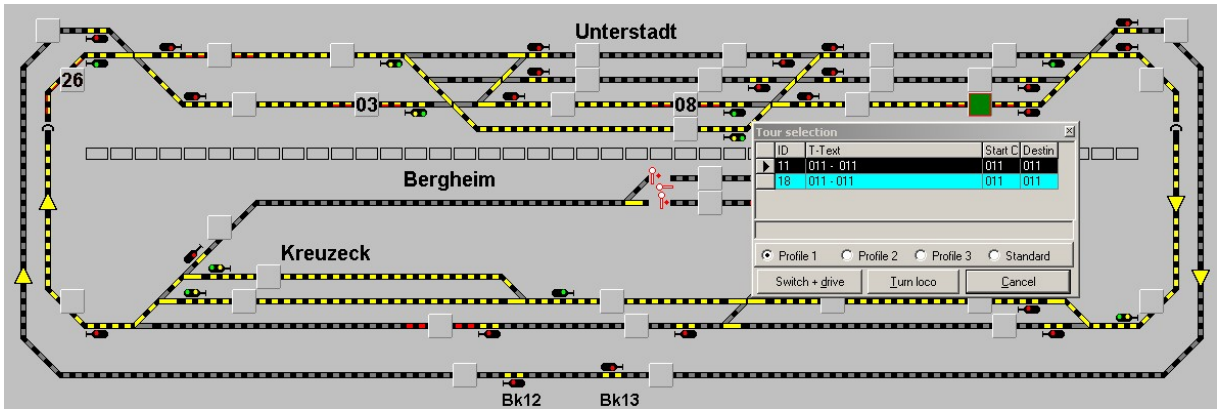
18.7 Switching tours

Tours can be switched in **WIN-DIGIPET 9.0** manually as well as automatically. If you use the automatic with demand contacts or the tour automatic, tour will be activated automatically, when the switching conditions are fulfilled. The manually switching of tours will be described in the following settings. But before using tours, you have to activate them in system settings according to section **4.15.1**.

18.7.1 Using the start/ destination -function for tours

If you want to activate a tour manually, click with the middle mouse button on the start train number display und again with the middle mouse button on the destination train number display (according to the registered tour start-/destination-contacts, see **9.2**). If no tour is found for this start-/destination-contact-combination the message "Tours not found will be displayed".

TIP!
For selecting a tour you can also use instead of the middle mouse button the combination of STRG-(CTRL-) Taste + right mouse button.



If the program has found (a) tour(s) according to your selection, the window „Tour selection“ will appear. This window displays the found tours with its ID-Number, ZF-text, start- and destination contact.

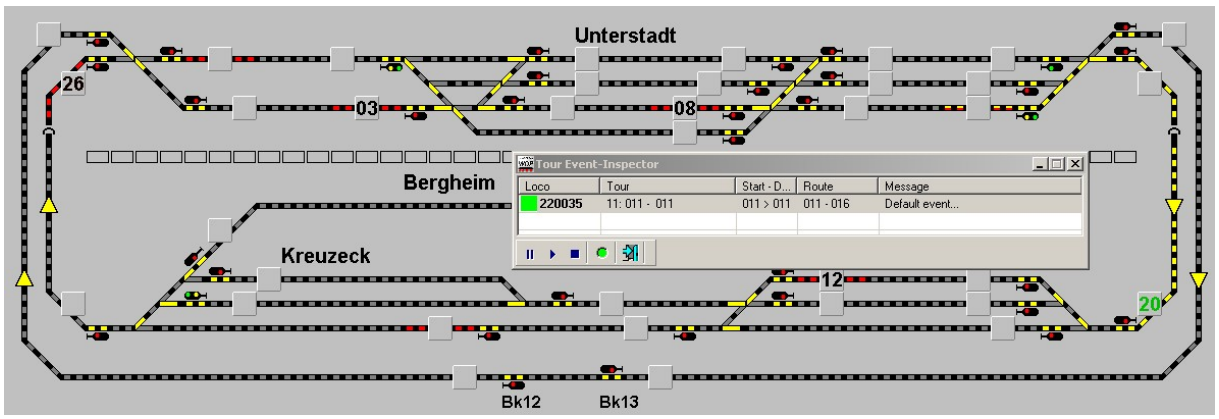
In this example the program found two tours.

Select now the desired tour, it will be marked yellow in the track diagram (not blinking), this means “Ready for switching”. The button **‘*Switch + Drive*’** will be enabled automatically, if a locomotive number is registered on the start contact. Details concerning the train number display are explained in section **18.14**.

Now select the way of execution („*Standard*“, „*Profile 1*“ to „*Profile 3*“) for the tour. Preselected is automatically the way of execution selected in the system settings on the index card „Program settings – Profiles“ according to section **4.14.2**.

If you want to change the driving direction of the locomotive **before the start** click on **‘*Turn loco*’**.

After selecting all options the tour will be activated via **‘*Switch + Drive*’** and the locomotive will start running as soon as the switching conditions for the first route of the tour is fulfilled.



The route will be marked yellow, the train number colour changes to „GREEN“ and the window „Tour event inspector“ will appear. This window is described in sections **9.10** and **18.17.3** and informs you about the actual state of the tour.

As soon as the train reaches the check contact (**Check next tour at contact:)** of the tour according to section **8.7**, the switching conditions of the next route will be checked and the route will be checked, if the switching conditions are fulfilled (see **9.1**).

18.7.3 Killing active tours

Active tours, that are not needed any more, can be killed. You have two possibilities for this:

- for **one marked** tour in the tour event inspector via the button
- or for **all** tours via the buttons or in the tour event inspector.

Important!
Of you to **kill** an active tour always, **before** you kill/release manually a route manually, that was started by a tour.

18.7.4 Execution of a manually activated tour

In the system settings it is possible to register a maximum waiting time for tours according to section **4.15.3**. In the tour is blocked longer than the waiting and the next route can't be switched, the program reacts as follows…..

- the tour is stopped
- the tour is marked with a red hour glass in the tour event inspector
- the train number is still green
- **no** acoustical or textual warning will appear/played.

You have to fix the reason for the "blocked" tour and afterwards you can force to tour to be reactivated with by the button or killed by the button (see **18.17.3**).

18.8 Changing the appearance of the track diagram

You change the appearance of the track diagram according to your own wishes. Therefor **WIN-DIGPET 9.0** offers several possibilities.

18.8.1 Changing zoom settings

You change the zoom setting of the track diagram by...

- by the menu <View> <Zoom plus/minus>
- or by the right mouse button and the context menu <Zoom plus/minus>
- or by clicking on the symbols in the toolbar.

You access all zoom settings directly by the combo box 

in the toolbar.

18.8.2 Selecting parts of track diagram

Sections of the track diagram, recorded in the track diagram editor (**6.3.3**), can be fetched onto the screen by clicking on the symbol <Screen sections> in the toolbar or via the short menu with the right mouse button.

This function is very helpful if you have a big track diagram and by this function you directly jump to different parts of your track diagram.

18.8.3 Changing the symbol table

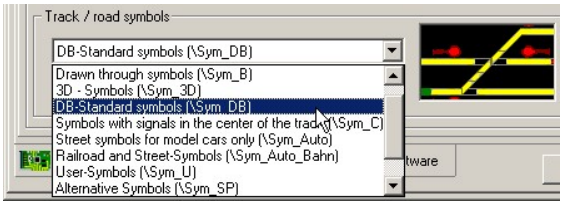
In **WIN-DIGIPET 9.0** you have the possibility to change the colours and the symbol in the symbol tables according to your own wishes/ideas.

In **WIN-DIGIPET 9.0** included are 11 different symbol tables, this are for model railroad only operation without cars 5 symbol tables, 3 special symbol tables (Alternative and Swiss railroad) and 1 User-Symbol table.

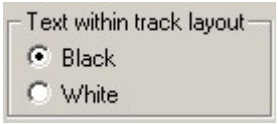
You can also change between the 5 symbol-tables mentioned first, because they are completely compatible. You can find pictures showing all symbol tables in sections **4.8.5** and **6.3.2**.

You can change the used symbol table in the system settings, that can be opened via <File> <System settings> or by the symbol  in the toolbar.

In the system settings select the index card „Program settings – General“ and in the selection box the desired symbol table.



You should also select on this index card whether the text in your track diagram should be displayed in black or white.



After these changes you can leave the system settings.

Important notice!
If you use the HSI-88 of LDT you should initialise the HIS-88 again to get proper feedback displays.

Because of this you should **never** open the system settings while trains are running on your layout.

18.9 Turntable operation

You can load the turntable through several commands: Either <Track diagram view> - <Turntable> or with the right mouse button short menu <Turntable> or the switch in the toolbar.

Operating the turntable see chapter **14**.

18.10 Transfer table operation

You can load the transfer table via <Extras> <Märklin transfer table> or by clicking on the symbol in the toolbar.

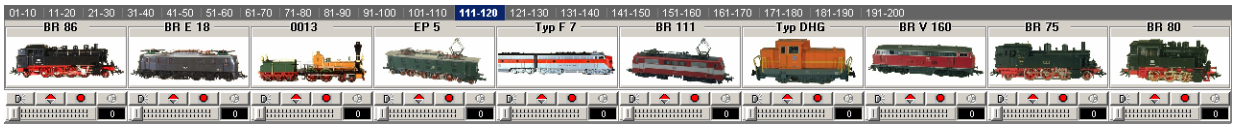
Operating the transfer table see **15**.

Hint!
For using the transfer table and the turntable you have to activate them in the system settings according to **4.8.6**.

18.11 Locomotive control

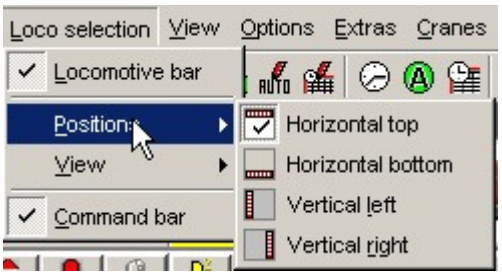
18.11.1 Loco selection

All locomotives recorded in the locomotive database with the category „On layout“ (**5.3.3**) are displayed in the „Loco selection“. This is a bar at the lower/upper/left/right screen edge with pictures of your locomotives list (**5.15**).



Max. **10** locomotives are displayed – similar to an index card- for faster access. The index card is automatically updated when new locomotives are added/deleted or they are temporarily put into ‘Display case’. A click on the index card, above the picture, displays the locomotives for your selection

You can (de-)activate the loco selection via <Loco selection> - <Locomotive bar>. And if the loco selection is activated you can (de-)activate the quick command bar via <Loco selection> - <Command bar>.



You can change this bar via <Loco selection> - 'Position' or in the toolbar 'View loco bar'.

There you can select: <Horizontal bottom> or <Horizontal top> or <Vertical left> or <Vertical right>.

Through <Loco selection> - <View> you can change the kind of display in the picture panels: <Pictures only> or <Text only> (these are class designations) or both: <Pictures and text>.

It is possible that the locomotive selection bar becomes very small, if the screen resolution is set high. You can adjust the locomotive bar with <Adjust height of locomotive bar> or <Adjust width of locomotive bar>. This is done in 6 steps to your own taste.

You can open the locomotive control of all locomotive displays in the loco selection by clicking on the locomotives picture.

Immediately the small or the big locomotive control (see **5.14**) of the selected locomotive will be displayed.

A loco control can be moved anywhere on the screen. Click on a title bar, hold the left mouse button, drag it to its new position and release the left mouse button in the new position (Windows – drag & drop).

By a click on the symbol of the big locomotive control it can be changed to small size if you haven't enough space on the screen.

You can open a locomotive control also by a click on a train number display showing a train number, after the click the control of the corresponding locomotive will be opened.

Important!
The size of the locomotive controls depends on your choices on the index card „Program settings – Locomotives“ in the system settings. You will always get the small locomotive control if you have checked „*Open always with small loco controls from loco bar*“.

18.11.2 Train number display: drag/delete locomotive numbers

A locomotive number can be dragged...

- with pressed right mouse button from the picture of the locomotive in the loco selection
- or with pressed right mouse button from the picture of the locomotive in an open locomotive control
- or with pressed right mouse button from the train number of the locomotive in the locomotive monitor

to a train number display (see **18.14.2**).

In the train number display the digital address of the locomotive will be shown. This is the train number for the operation with **WIN-DIGIPET 9.0**.

A train number can be **deleted** from a train number displayed when clicking with pressed **Shift**-Key on the train number display in your track diagram.

18.11.3 Locomotive-Controls („Maxi“ or „Mini“)

The size of the locomotive controls depends on your choices on the index card „Program settings – Locomotives“ in the system settings. You will always get the small locomotive control if you have checked „*Open always with small loco controls from loco bar*“. In the other case you will get the big locomotive control.

Position and size of these panels can be modified via the menu <Window> or the toolbar <Loco controls>.

- <Arrange controls at top> or symbol .
  All control panels displayed in the track diagram are shifted to the upper edge of the screen and reduced. The same is achieved with the function key **F2** on your computer.

- <Minimise all controls> or symbol .
  All control panels displayed in the track diagram are reduced to „Small loco controls“ (**5.14**). The same is achieved with the function key **F3** on your computer.

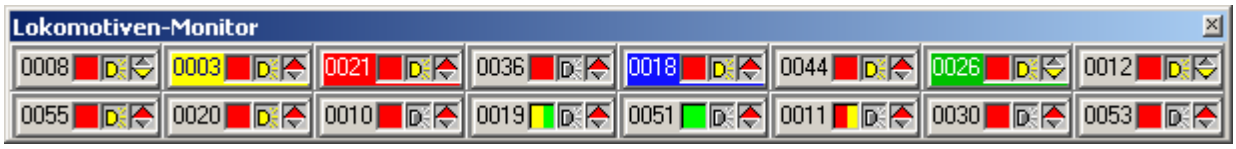
- <Close all controls> or symbol .
  All control panels are masked and closed. The same is achieved with the function key **F4** on your computer.

With the drag/drop function you can position the loco control panels anywhere on the screen.

18.11.4 Locomotive-Monitor

You can open the locomotive monitor via the menu command <Extras> <Locomotive-Monitor> or by a click on the symbol in the toolbar of the main program.

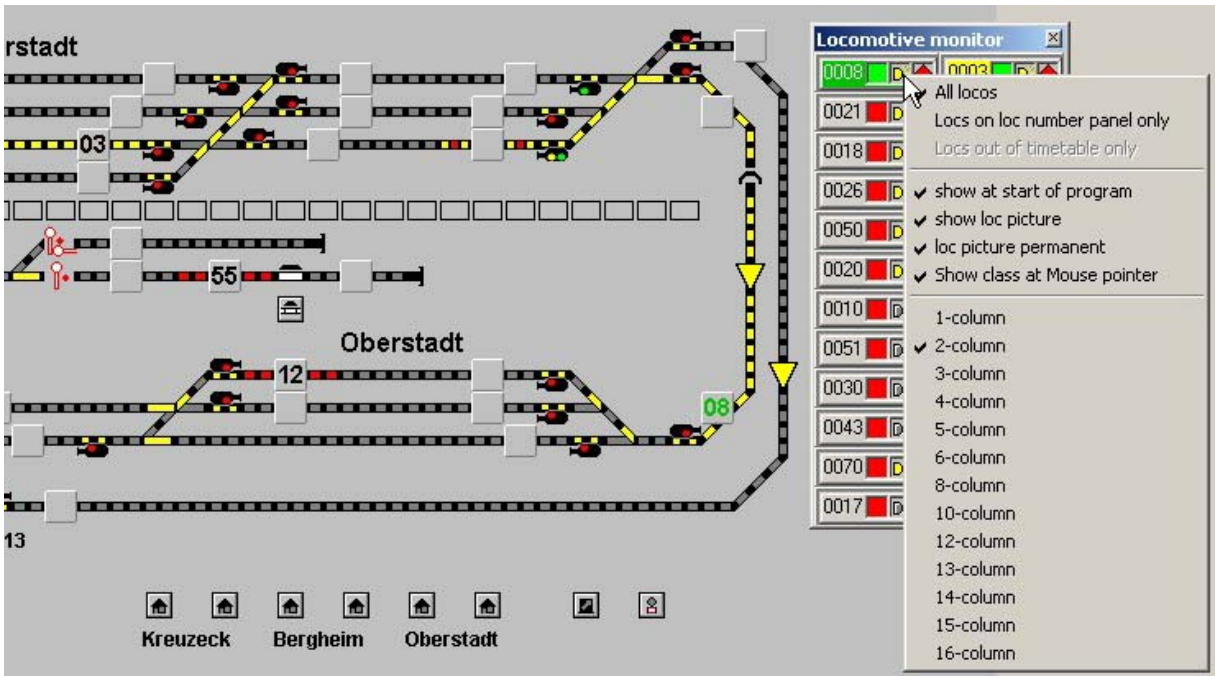
The locomotive is a very good tool to monitor all your locomotives at the same time using minimal space on the screen. You can monitor if a locomotive is running, accelerating, braking or stopping. It is also displayed if the locomotive requires maintenance or if the locomotive colour has been switched to RED, GREEN or BLUE.



If you want to control a locomotive you can open with a click on a locomotive number in the locomotive monitor the locomotive's control.

The functions stop, change of driving direction and loco-function (e.g. headlights on/off) can even be controlled directly in the locomotive monitor. The functions of the locomotive monitor are described in section **5.14.3**.

With a <u>right mouse click</u> on the right part of locomotive frame (see **5.14.3**), you can open a context, where you can choose different options concerning the locomotive monitor.



You can select in this menu, if want to see all locomotives in the monitor or only the locomotive currently registered in train number displays.

Furthermore you select...

- if the locomotive monitor should be displayed when start the program
- if you want small locomotive picture to be displayed
- if you want the picture to be displayed permanently or only when moving the mouse over train numbers in the locomotive monitor
- if you want the class to be displayed when moving the mouse over train numbers in the locomotive monitor
- the numbers of columns in the locomotive monitor

You can move the locomotive monitor to any place on your screen. If you have not very much space on your screen, the locomotive monitor is sometimes much more effective than the loco bar.

Tip!
If you want to the locomotive monitor not to be displayed after the program start, then you have to uncheck the relevant option in the context menu of the locomotive monitor.

18.11.5 Controlling locomotives with WIN-DIGIPET 9.0

You can control locomotives by...

- the **Locomotive-Controls** („Maxi" or „Mini")
- the locomotive and **control bar** for locomotives.

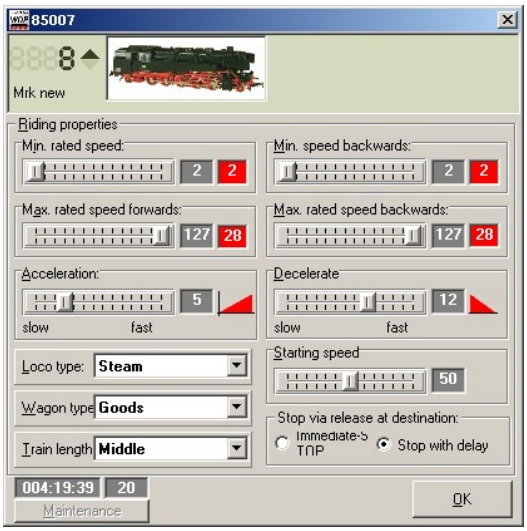
A) Locomotive-Controls („Maxi" or „Mini")

The functions of the controls are described in section **5.14**.

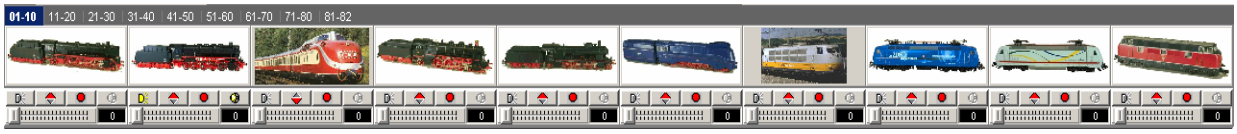
By a click on the symbol in the locomotive control you can open a window to change some of the locomotives parameters without the need to open the locomotive database.

All sliders and combo boxes have the same functions as the according sliders and combo boxes in the locomotive database (see chapter **5**).

In this window you can also the hours of operation and the maintenance interval. If a maintenance is necessary the button **'*Maintenance*'** will be activated and you can press to register a maintenance.



B) The quick loco bar



The quick loco bar consists of the locomotive- and the control-bar. Both can only be seen when using the horizontal display mode.

When placing the quick loco bar on the left or right side the screen, the command bar will not be displayed.

The quick loco bar and its usage is described in section **5.15.x**.

18.11.6 Controlling locomotives with control panels of the digital system

You can always control your locomotives with control panels of your digital system.

Important for the Märklin-Digital-System:
The locomotives address **68** may never used because it is reserved for internal program usage. You should never activate a locomotive on a Märklin control panel that is controlled by the program, because while this locomotive is activated on a Märklin control panel it can't be controlled by the program.

When using the Lenz-System you will receive an error message „Locomotive already under control", if you want to control a locomotive with a locomotive control and the locomotive is already activated on one of your manual control panels.

18.11.7 Multi-tractions

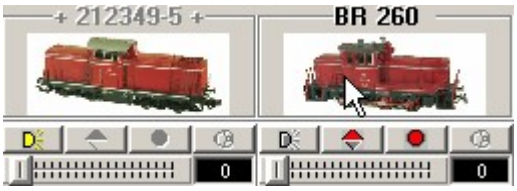
A multi-traction is used when more than one locomotive is coupled together with a train. You can create multi-tractions in **WIN-DIGIPET 9.0** to control multi-tractions the same way as a normal locomotive.

In a multi-traction you can assign up to two locomotives additionally to one locomotive and all (3) locomotive are always controlled by the locomotive the others have been assigned to.

Such multi-tractions can be created in the following way in **WIN-DIGIPET 9.0**.

- Open the locomotive control („Maxi“ or „Mini“) of the first locomotive (see **18.11.2**)
- Drag the picture of the second or third locomotive e.g. from the locomotive bar with pressed right mouse button **onto the picture of the first locomotive** in its locomotive control.
  In the left and right corner of the picture the locomotive number of the second/third locomotive will appear to indicate the traction.

You can see this always by a different frame caption in the locomotive bar for the second and third locomotive.



You can only switch the LIGHT and SOUND of the second and third locomotive.

If you move the mouse cursor over the picture of the first locomotive of the traction in the locomotive bar, a tool tip will display also the classes of the second and third locomotive.

If you want to create a traction of locomotives with different direction, an error message will be displayed. Then you have to correct the direction and retry the creation of the traction.

The second and third locomotives are always controlled in manual and automatic operations only by the first locomotive of the traction.

Tractions are saved at the end of the program and recreated when restating the program.

If you click on the red/black digital address of a second or third locomotive in traction, the locomotive control will open. These locomotives are uncontrollable, but you can watch the speed indicators to compare them to the first locomotive and eventually correct the minimum and maximum rated speed of the locomotive.

By a click with the right mouse button on the **red** / **black** digital address (in the first locomotive’s control) of the second or third locomotive in traction (after a security request) you can release the locomotives out of the traction. Released locomotives are available again for normal control.

All tractions can be released by the menu command <Options> <Release all loco tractions> or by the symbol in the toolbar.

18.11.9 Activate/Deactivate/Delete all locomotives from train number displays

Select in the main program the menu command <View> <Loc activate/deactivate/delete> or click on the symbol in the toolbar. A new window "Lock/activate locomotives".

The colours of the train numbers have the following meaning within **WIN-DIGIPET 9.0**.

If the colour of the train number is...

- BLACK/WHITE, the train can be used in the timetable and any automatic
- RED, the train will not continue driving when using the automatic with demand contacts and also not in all lines of the tour automatic with the symbol ("By Arrival")
- BLUE, the train will not continue driving when using the timetable and also not in all lines of the tour automatic with the symbols or ("Departure Time")

The buttons are self-explanatory. The first three buttons change the colour of the locomotives in for **all** train number displays.

The button '***Delete all train labels***' will remove the train numbers from all train number displays in your track diagram.

The button '***Cancel***' closes the window again.

18.11.10 Activate/Deactivate/Delete single locomotives on train number displays

You can activate/deactivate/delete single locomotives on train number displays. Move your mouse cursor over the train number display to change between...

- RED 08 and BLACK 08 — ALT-key + right mouse button
- BLUE 21 and BLACK 21 — ALT- and Shift-key + right mouse button
- For deleting a train number — Shift-key + right mouse button

You **have to** hold the key down while pressing the mouse button.

Important tip!
The deletion of a **single** train number will **not** cause a security request.

With the key-button-combinations described above you can switch between the colour in both directions (e.g. RED->BLACK; BLACK->RED)..

The basic settings to choose between the normal train number colours BLACK and WHITE can be chosen in the system settings according to section **4.8.4**.

18.12 Emergency stop

18.12.1 Emergency stop via F9, menu or toolbar

At any point of the program you can perform an emergency stop by pressing the function key **F9** of your computer.

You can reach the emergency stop also via <Options> - <Emergency stop> or the switch in the toolbar .

An “emergency stop” window will open.

After an accident, you can adjust the speed of all involved locomotives to zero at the Loco-Control-Bar or with the loco controls, before you click at ***‘OK’***. However all operation of solenoid devices is closed, until the “emergency stop” window is closed again.

You have got two options to continue after an emergency stop:

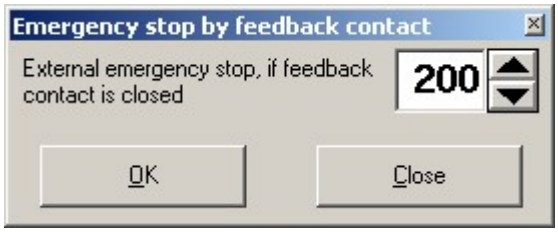
- *„Start slowly to last stored speed “.*
  All locomotives will be adjusted to their last stored speed with their registered acceleration delay.
- *„ Stop all locomotives “.*
  If you click at “OK”, all locomotives will be stopped and you have to control their speed manually again.

18.12.2 External emergency stop by feedback contact (key)

You can register this contact in the menu below <Extras> <External emergency stop by feedback contact>.

Here, you can register the feedback contact number for the emergency stop key.

You can install a key-button for the external emergency stop at any place you like on your model railroad. This key-button will cause the emergency stop by a designated contact of an s88 to your PC. In case of emergency this will save long ways.



18.13 Miscellaneous options

18.13. Stop/Go all locomotives

Under the menu <Options> – as well as by the toolbar – you can stop or start all locomotives 

.

Your layout is not switched off, contrary to the emergency stop, but all locomotives are switched to speed 0 (STOP symbol then RED ) or acceleration to the pre-determined speed (STOP symbol then GRÜN ). Before this a confirmation request will be displayed

At any point of the program you can initiate this function by pressing the function key **F8** on your computer.

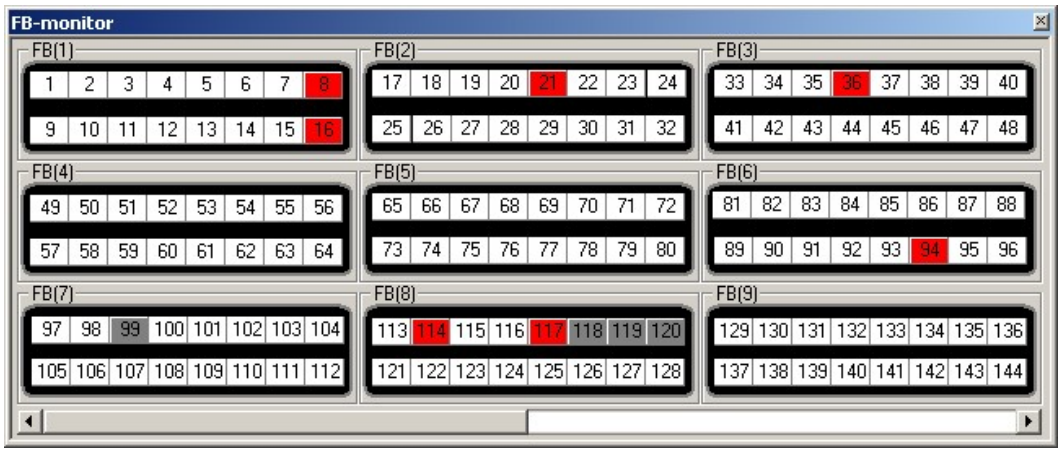
18.13.2 How to open the FB Monitor

Under the menu <Options> – as well as by the toolbar  – you can open the FB-Monitor. The feedback monitor is explained under section **7.5**.

The monitor is very useful for seeking errors.

18.13.3 Display feedback contact numbers

Under the menu <Options> <Display all feedback contacts> you can display all feedback contacts.



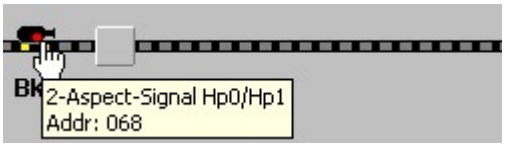
You can check this switch to briefly check the recorded feedback contacts. All feedback contact numbers in the track diagram are displayed, but not the track occupied. This function is temporarily switched off. Once the switch has been unchecked, everything works as before, including the track occupied Sometimes the numbers are not readable. As soon as point to a number, left click the mouse. The number is enlarged (Zoom function, see **8.11**).

If you have switched this function on prior to switching a route with the start-/demand function or starting an automatic **WIN-DIGIPET 9.0** will switch it automatically off.

18.13.4 Display info about symbol below mouse pointer

If you want to see infos about symbols in the track diagram check <Options> < Display info about symbol below mouse pointer >.

If you have activated this function a tool tip will show you the type of symbol, feedback contact numbers, solenoid device addresses etc. when moving your mouse over a symbol in your track diagram.



18.13.5 Individual background sound

During the model railroad operation several sounds can be played or activated (sounds).

Under the menu <Extras> <Play sound> or via in the toolbar you get to the function Sound effects.

The window „Play Sound (*.WAV)“ appears.

All files ending in *.WAV are displayed in the right list field which are stored in the WIN-DIGIPET directory **\SOUND**.

However, any WAV file on your Hard Disk can be used.

Double clicking the file in the list plays the file.

Up to 6 files can be permanently saved in a file. Drag a file –with the left mouse button pressed- from the list field of the WAV files to the fields below the list .

The file can be cleared with a double click on the fields and the left mouse button pressed.

The red button, when pressed, plays the file once. A check in the box to the left plays the file continuously (Auto-Repeat).

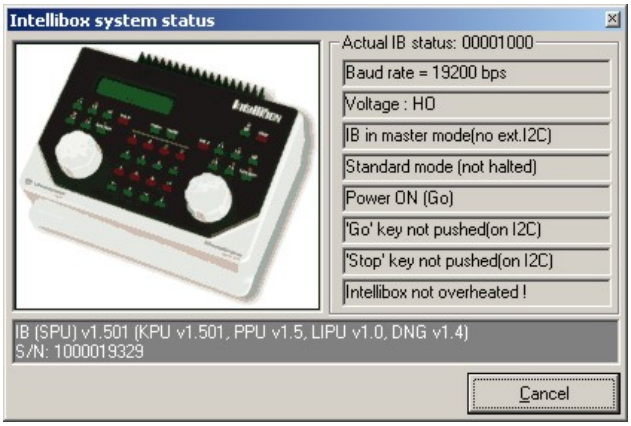
All files are saved when the window is closed and restored when reloaded.

18.13.6 Intellibox: Display and printouts

If you have selected the Intellibox / Icum in the system settings (see chapter **4.4**) an additional panel <Intellibox> will appear in the menu bar. If you click at this panel, you will get to the following displays or functions:

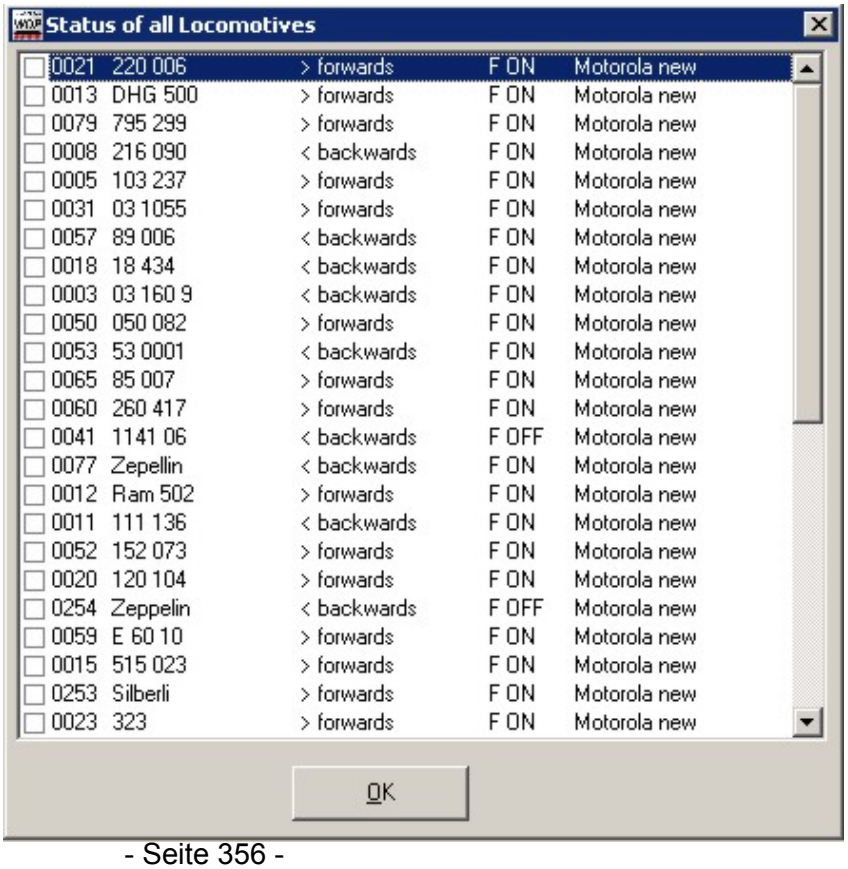
- <Status Intellibox>

  A new window displays the system status of the Intellibox including the baud rate, version number, etc.



- <Status of all locomotives >

  A new window opens displaying all present addresses of all locomotives, their direction of travel and the functions.

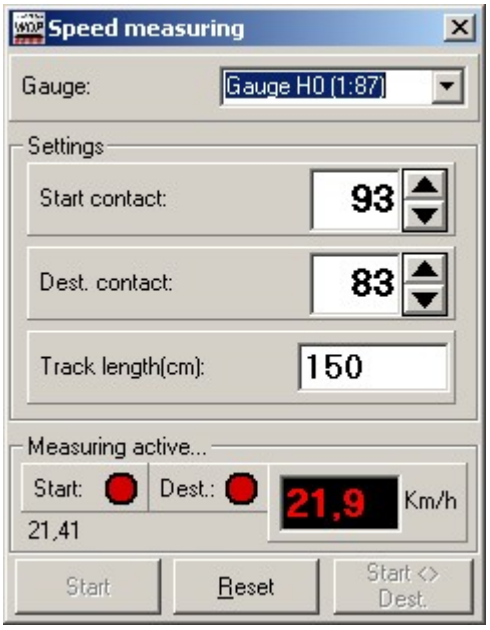


- <Read and print all special options>

  You can display and print all special options when using this option.

18.13.7 Running speeds true to scale

The function “Speed measuring” makes it possible to measure the speed of your locomotives shown in km/h (true to scale). Probably you will be astonished how (too) fast your locomotives will ride (race?) over your model railroad. This function makes it possible to check the maximum speed of your locomotives. If necessary you have to adjust (not mandatory) the max. speed of your locomotives again.



Under menu <Extras> click at <Speed measuring> or at the button of the toolbar.

First, select your specific scale.

Select a start- and a destination contact of your model railroad and take the exact distance between both contacts in **cm**. Please select a straight track section if possible and enter the data.

Click at ***‘Start’*** (= Measuring active).

Open the Loco-Control of the loco you would like to measure. Select the corresponding speed and let your loco ride from the start- to the destination contact.

As soon as the loco passes the start contact, the measuring starts; it will be ended, if the loco reaches its destination contact.

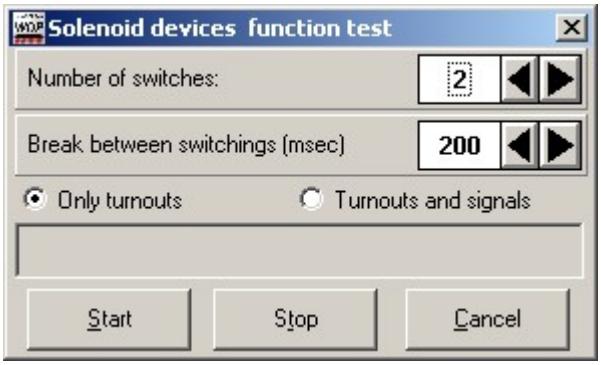
The speed in **kilometres per hour** will be shown then.

The speed display can be reseted by **‘*Reset*’** and restarted with **‘*Start*’**.

18.13.8 Test of all turnouts after a long operations break

You will get to this function by menu <Extras> <Solenoid device function test> or via the button at the toolbar.

The function “Solenoid device function test” makes it possible, to “shake up” all normal turnouts, three-way-turnouts and double slip turnouts on your model railroad after a long operations break (or before operations) and “wake” them up again, so that they are switch able again.



You can freely adjust the amount of switching (2 – 10) and the break between two switching (100 – 2000 msec).

However, a three-way-turnout will always be switched six times fix, to guarantee to show the correct setting at your track layout after switching.

All switching can be watched at your display (track diagram).

18.13.9 HelmoTrain number-Identifying-System

You can get to the Helmo-System via menu <Extras> < HELMO Train Detection System> or by switching the button of the toolbar.

The system is active, as soon as you have marked “active” at the Helmo-System in the system settings, section **4.6**.

To use the Helmo-System, you have to activate it at the menu bar (loading). To have a better overview, you can minimise the Helmo-window (click at the minimise button at the top of the window) and it will be moved to the task bar.

A window opens to show the Helmo-Train number-Detection.

The Helmo-COM-port, registered as described in section **4.6**, will be activated after starting the system.

Only the amount of reading devices will be shown, which have been registered in the system settings (Helmo, see **4.6**). In this example the entry was **8** reading devices (01 to 08) out of a maximum of **30**.

The small white number in the left of the digital display is the current number of the reading device.

The black numbers in the grey input panels are free to define and combine the train number display on your track layout with the Helmo system.

Enter the correct feedback number of the train number panel (from your track layout), which then will be automatically transferred out of the Helmo-system.

If the Helmo-system has recognised a locomotive address (max. 99 addresses are possible), it will be transferred directly to the train number panel of the corresponding track layout position.

The recognised locomotive addresses will be shown as red digital numbers.

The feedback contacts at the grey panels have also an additional function:

The locomotive address displayed at the Helmo system will at least be updated, if **another** loco will be recognised during passing the reading device.

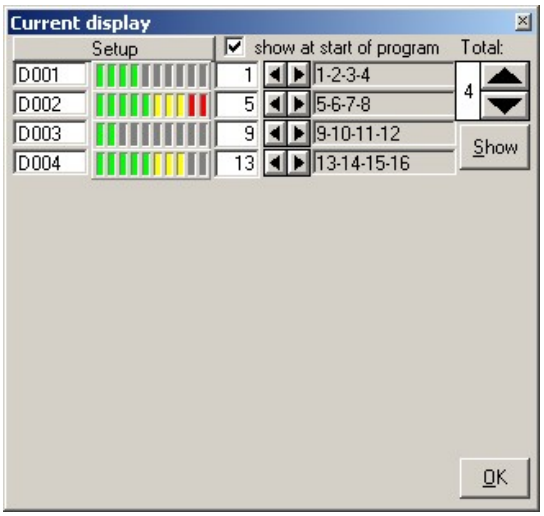
To improve this, the Helmo address will be deleted by the program (= grey, digital **00**), if the corresponding contact (= the feedback contact of the train number panel at the track layout) at the grey panel in the right will be reported as “cleared” (free) from your model railroad.

18.13.10 Current displays

If you own some of the current displays distributed by the Beta-Tester Gerd Boll, you make these displays also visible on your computer screen.

Select the menu command <Extras> <Power indicator> or click on the symbol in the toolbar.

The window„Current display“ will appear.



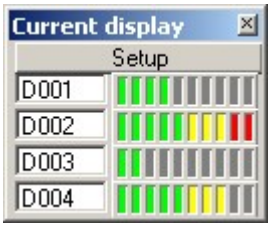
After a click on **‘*Setup*’** you can make all required settings.

At first you have to select how many current displays you are using by the arrow button in the top left corner of the window. Afterwards you have click on **‘*Show*’**.

The text fields are used to enter a description of the monitored electric circuits.

Right of the current bar graph indicators you can enter the first feedback-contact address of the used feedback module.

The field right of this shows you the feedback contact numbers, that are automatically also used by this display.



Of course the feedback contacts have to be connected to the current displays, because otherwise no current will be indicated.

At the top of the window you see a check box *“Show at start of program”*. You have to check this box if you want **WIN-DIGIPET 9.0** to display the current indicators at every start of the program.

With these indicators you are able to monitor the power/current consumption of your electric circuits.

18.13.11 Watch-Dog

If you use the Watch-Dog of the Beta-Tester Gerd Boll you can integrate it in **WIN-DIGIPET 9.0** to make the operations of your model railroad layout safer.

Via the menu command <Extras> <Watch-Dog Decoder> or with a click on the symbol in the toolbar the window „Watch-Dog decoder address“ will opened.

Here you can enter the basic address of the solenoid device decoder. This address has to be always the first of the four decoder addresses. The second decoder address can be used for an additional solenoid device. The third and fourth decoder address may not be used, because they are reserved.

When checking „*Watch-Dog ON*“ and pressing afterwards the button **'*OK*'** the Watch-Dog will be activated.

From this moment on **WIN-DIGIPET 9.0** sends very second the solenoid device command “Green” and the Watch-Dog monitors this. If this command is not registered by the Watch-Dog for more than 5 seconds, the Watch-Dog switches all boosters off and stops the trains by this.

For a maximum of security, you shouldn’t use the build-in booster of your central unit, because the watchdog can’t monitor this electrical circuit. But a break-down of the central unit (not the built-in booster) will also be monitored and the booster will be switched off.

But you should connect all your solenoid devices to the built-in booster of the central unit, because the Watch-Dog will switch off also when performing the following actions longer than 5 seconds:

- „Starting basic settings…“
- At an „Emergency stop“
- When opening the „System settings“
- When opening the „Track diagram editor“,
- When opening the „Locomotive database“
- „Solenoid devices function test“.

After closing the affected program parts, the Watch-Dog will switch again the boosters automatically on.

When leaving **WIN-DIGIPET 9.0**, the solenoid device command “Red” will be sent, because otherwise you won’t be able to use your model railroad layout without your computer.

18.13.12 COM-Display at the toolbar

A click at this display 

offers the possibility to reset the digital system for the following systems:

- Uhlenbrock–Intellibox, if special option 663 is set to 1*.
- ICUM-Modeltreno and Lenz-Digital Plus.
- For the Lenz-Digital-Plus System, also for all demand contact modules the actual values will be demanded.

18.13.13 COM (HSI) - Display at the toolbar

If the LDT-HSI 88 Interface is activated (system settings, chapter **4.3**), next to the 1st COM-port display for the main digital system, a 2nd COM-port display appears for the HSI-Interface.

Once the HSI s88 has been initialised and you start **WIN-DIGIPET 9.0** again, without having switched off the power supply to the HSI before, faulty measurements may happen, caused by remaining data in the HSI. A clear-function during initialising of the HSI doesn't exist.

With a click at the button "COM 2", you can initialise the HSI again, until the correct values of the connected feedback modules are shown.

TIP!
You should always reinitialize the HSI-88 when leaving the system settings back to the main program to avoid wrong feedback information.

18.13.14 Project symbol at the toolbar

A click at the name of your actual project (example "Project 1") opens the print routine for your current settings (see chapter **3.4.4**).

18.13.15 Service-homepage via the toolbar

A click at the button  opens your Internet-Browser, to get a direct connection to the WIN-DIGIPET Service Homepage (see chapter **2.6**).

18.14 Train number display

18.14.1 General

Prerequisites for the train numbers display are as follows:

- You have placed train numbers symbols within the track diagram (**6.3.4**)
- You have entered a feedback contact number into **each of these symbol panels** (**6.3.4** and **7.4**).
  If **0** has been entered as feedback contact number to a train number panel, a loco address can not be entered via drag and drop. A feedback contact number (greater than "0") has to be assigned to a train number panel (mandatory).
- You have entered in the routes editor, per route, one feedback contact number as a number of the starting contact, and another feedback contact number as a number of the destination contact (**8.7.3**).

The train numbers display works correctly if trains/locomotives run through **routes** switching, i.e. with the route switched by the start-and-destination function or with operation according to timetables or in automatic mode using demand contacts or the tour automatic.

On the other hand, if you set a train/locomotive in motion after you had set the solenoid device of its itinerary by **individual** switching, the train number display will not work properly or not work at all.

If you quit the locomotive database, the train numbers at the train number panels will be updated automatically, even if you have changed the sorting within the loco database or you have moved some locomotives to the *"showcase".*

A peculiarity is the display of train numbers with **four digits**. Due to the fact, that four digits do not match to the train number panel (or the size of the types would be too small / not visible), the first digit of the address will be characterised with a colour code, equal to the international colour code for resistors.

Therefore the meaning for the first digit is:
1 = brown
2 = red
3 = orange
4 = yellow
5 = green
6 = blue
7 = violet
8 = dark grey
9 = white

If – for example – the loco address is 4234, the number 234 will be displayed at the train number panel, with the colour code **YELLOW** at the top and the bottom of the panel.

TIP!
You can cover two different train number panels of your track layout with the same feedback contact number. Train numbers which you enter in one panel will also be displayed in the other panel; they also will be deleted both, if one of both panels receives the deleting command.

This could be advantageous for certain operations situation, for example:
Train number panels of fiddle yard sections, which are not visible at the usual display range of the track layout, can be placed in addition as a "duplicate" train number panel in the visible range. You can then notice if a train has reached its destination in a not visible section.

18.14.2 Train number display with feedback contacts

Ensure that *'Masked: starting contact free and displayed: destination contact reached'* is selected with *„Train number display"* in the basic system settings.

Click in the loco selection (**18.11.1**) you want to control. Keep the left mouse button pressed, drag the mouse pointer to the relevant train number symbol and release the left mouse button. The digital address of the locomotive- which is also the train number- appears at once in the train number panel.

If **this** train number is already available at your track layout, you will get a message *"train number already exists"* and this position will be marked **red** at your track layout. This eases the finding of an already existing entry of a train number.

Put the train/locomotive onto the train number panel that is also the starting contact of the desired route.

If you have ticked *'Display picture autom. when mouse moves over train label'* (**4.8.3**) in the basic system settings, the picture of the locomotive appears at once when you point to the train numbers panel with the mouse pointer, otherwise the digital address or the class of the loco will be shown as a tool tip.

If you click on a train number symbol with a train number assigned the loc control of this loc appears.

The entry into a train number panel can be deleted through Shift + right mouse button without any confirmation request.

All entries in the train number symbols can be deleted via <View> <Loc activate/deactivate/delete > or the switch in the symbol (see **18.11.10**).

Switch the route and run a train over it (**18.5.1**): The train number will be masked in the starting train numbers panel the moment the train leaves it. It will be **displayed** in the destination train numbers panel the moment the train reaches the destination contact. The same happens automatically in the operation with timetables, automatic mode with demand contacts and the tour automatic.

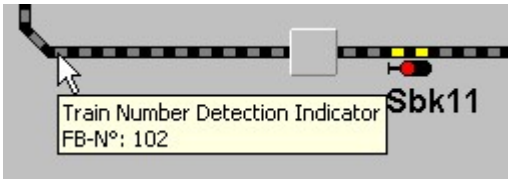
18.14. Train number display without feedback contacts

Ensure that *'Jump from start to destination without feedback contacts'* is selected with *„Train numbers display"* in the basic system settings.

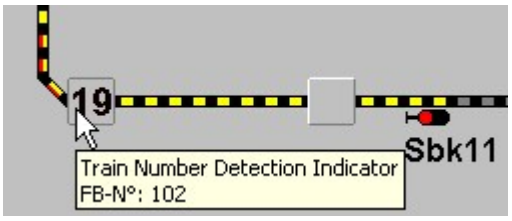
Proceed as described in **18.5.1**: Upon the command 'Switch route', the train number jumps from the starting contact panel to the destination contact panel of this route. The same applies for operation with timetables, automatic mode with demand contacts and the tour automatic.

18.14.4 Train number tracking

For the first time you can use **in WIN-DIGIPET 9.0** train number tracking symbols on long distances of your track diagram. They can not to be seen in the track diagram, because they look like a quite normal rail piece. When you move the mouse over them, a help card ("tool tip") is displayed.



If a train occupies the feedback contact assigned to the train number tracking symbol the train number appears in the track diagram and disappears when the feedback contact is free again.



You must draw the train number tracking symbols in the track diagram's editor according to **6.3.4** and assign them to a feedback contact number according to section **7.4.2**.

18.15 Timetable operation

The main concept of the time table operation is explained in section **11.1** in detail.

Also the required registrations in the timetable editor have been explained in chapter **11**. Reading chapter **11** is a prerequisite for using timetables.

In the following sections the manual gives and describes always **recommended** possibility.

TIP!
Before starting a timetable you should switch all solenoid devices to their basic settings (see **18.4**).

This helps you to avoid faults during the timetable operations, because of wrongly-switched solenoid devices caused by manual intervention.

18.15.1 Access; Selecting a timetable

Click on <File> <Timetable operation> or on the switch in the toolbar: This is how you reach the operation according to timetables. A window „Select timetable“ appears containing the names of all timetables recorded so far

For selection click at the name of the timetable you want to have executed. The line will be shown with a blue background and the name of the timetable will be displayed in the upper left. Below this the belonging remarks (if existing) will be shown.

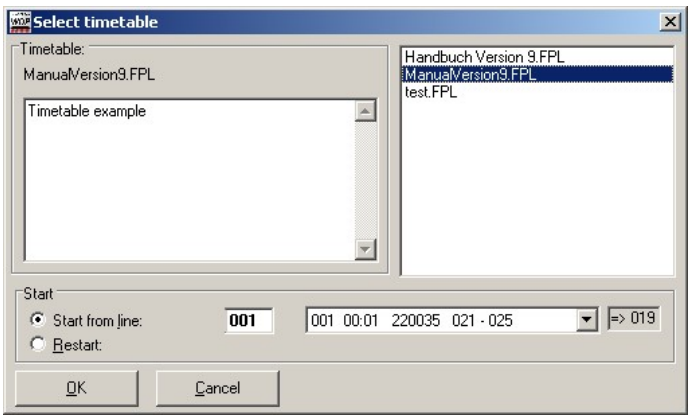
If you would like to start this timetable from the first line, please select *“Restart”*. In the panel right next to *“Start”* from line” and the number “001” will be shown. In the listing panel right next to it you can see the departure time, the locomotive and the route for this starting line.

In the grey panel next to it, the total amount of lines for this timetable will be shown.

Confirm with ***‘OK’***.

If, however, this timetable had previously been interrupted and stored as of a given line number, this will automatically appear in the right hand rectangle.

You can start each selected timetable as of any desired line number.



- To do so, select „Start as of line“. Activate, by a mouse click the right hand rectangle and overwrite the contents, via the keyboard, with the line number from where you want the timetable to be executed. Confirm with ***'OK'***.
- Or – for a better view – you click at the down arrow of the listing panel and you will get all timetable lines of this timetable for a free selection. With a click at one of these lines you can select the starting line of this timetable. Confirm with ***'OK'***.

18.15.2 Checks before starting a timetable

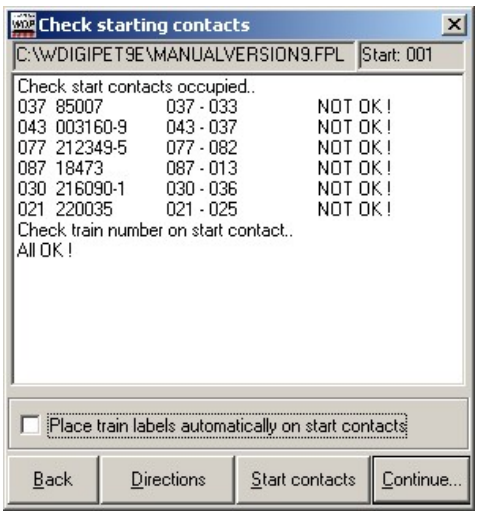
Checks carried out by the program before you start the timetable ensure that you have placed each locomotive concerned in its specified starting position, i.e. on its correct starting contact.

In this context, the **check of starting contact** function is of particular importance and the window „Check starting contact“ opens automatically after every timetable selection- ***'OK'***. All contacts that are not occupied by a locomotive are displayed 'NOT OK'. If all contacts are occupied by a locomotive the message 'All OK' is displayed in the window.

This is not possible in some timetable structures; examples: Different locomotives move off at different starting times, but use **one** starting contact. **One** locomotive moves off at different starting contacts at different times, etc. In this case ignore the messages „NOT OK“.

To correct this you will use all displayed non-occupied starting contacts („NOT OK“) to occupy with locomotives (if it does not interfere with the timetable structure). Click again on ***'Starting contacts'***. As a result of this check the message „All OK“ is displayed.

Furthermore the program already checks at this stage, if all train number panels for the start of this timetable are covered by the correct train numbers. Due to the outcome of this check, you can change some locomotives manually to their correct position.



The correct occupation of the starting contacts is also checked before the new start of the same timetable, before the start of another timetable and before passing to an add-on or self- repeating timetable („Appending a timetable“, see **11.14**).

If a timetable should start with a subsequent line instead of the first one („Start as of line...“, etc.), the system checks the correct occupation of all contacts which have to be regarded as starting contacts of that line.

All locomotive addresses are **automatically** transferred into the train number display fields of the starting contacts, by clicking) ***'Continue'*** and if the switch *„Set train numbers automatically on starting contacts“* is activated (checked) You do not have to concentrate on the correct occupation of the train number display fields.

You have to select the digital addresses of locomotives from the locomotive selection and transfer them to the train number symbols (as described in **18.14.2**) at the beginning of each timetable time, if the timetable structure does not allow the above function or you have deactivated it.

Important!
For prevention of crashes it is very important that all train number symbols are occupied with the correct train numbers.

Only with the **Digital system Uhlenbrock-Intellibox and Lenz Digital Plus** can you check automatically with the switch ***'Loco directions'*** whether or not in this timetable the locomotives are facing in the right direction. A new listing field appears displaying all locomotives of this timetable, including their direction of movement. A manual check as in the Märklin digital system (see **18.15.3**) is not necessary due to the true feedback from your model railroad to the Intellibox.

You return to the selection of another timetable- without starting the selected timetable- via ***'Back'***.

18.15.3 Start and normal execution of timetable

Click on ***'Next'*** in the window „Check starting contacts".

The timetable command panel appears at the upper right hand side of the screen, which can be moved to every desired position on your screen.

On the outer left you see the model railroad clock (displaying hours: minutes: seconds). It starts running with the starting time of the first timetable line. Next to it, the white panel displays the time factor (1...15) you had determined in the basic systems settings (**4.11.1**).

You can alter it **temporarily** with the arrows at its right, even while the timetable is running. This, however, does not influence the setting of the time factor in the basic system settings, and the latter will appear in the time factor panel each time the main program is loaded. The arrival times do not correspond anymore if they are temporarily changed, as explained in **11.5**.

In the comment panel with the selection arrow, next to the time factor panel, the contents of the route buffer are indicated (see below in **12.15.5**). Its maximum size was defined in the basic system settings (**4.11.3**).

Every line of the routes buffer, shows the loco and the route (separated by **#**).

You will see the actual processed route next to the headline of the timetable window.

 The symbols from left to right have the following functions:

- Start/Stop of the timetable (green = Start command, red = Stop command)
- Switching routes manually from the buffer
- Delete routes from buffer
- Display of contacts not reached
- Open timetable inspector
- Block and release locomotives in the current timetable
- Close timetable

The info fields stand for the following:

- Starting time of timetable line executed next
- Locomotive's class
- Description of the route
- Number of routes in the routes buffer
- The item number of the „line" displayed to the left and the total number of lines

At first, ensure that **all** locomotives of the selected timetable are positioned in the correct **direction of travel**, avoiding that they move off inadvertently backwards at timetable start. Make certain, that **no** locomotive of the selected timetable is called at a Märklin **control unit**.

Start the timetable by a click on the starting switch. It changes its colour from red to green, and the timetable starts running.

You can also use the function key **F12** on your computer to start and stop the timetable.

As soon as the model railroad time is equal to the starting time of the timetable, that line will be executed. The turnouts and signals of the relevant itinerary are switched, the relevant locomotive starts, moves along its itinerary, performs the given commands at intermediary contacts (if any) and stops at the end of the itinerary.

This operating sequence is subjected to certain conditions.

- A timetable line will only be executed, if the condition to switch, stipulated for the relevant route are fulfilled. If they are not, the route will not be switched.
- A timetable line will only be executed after the relevant locomotive has correctly made/switched all contacts assigned to the preceding route. As long as this is not complied with, the route will not be switched.
- All routes which for the above – mentioned reasons could not be switched as per specification at a given time, are stored in the „Routes buffer" (see below **18.15.6**).

In this way the **WIN-DIGIPET 9.0** executes the first timetable.

At the same time the next timetable line is shown in the execution display. It will be executed as soon as the model railroad time is equal to the starting time of the second timetable line.

Thereafter, display and execution of the third timetable line will follow, etc.

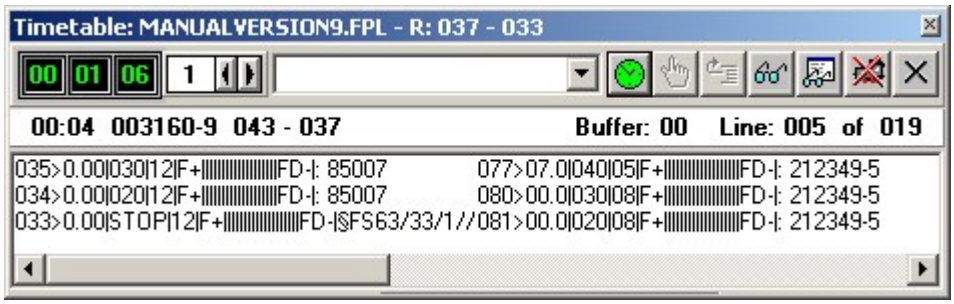
You can stop the operation with timetables at any time by clicking at the green starting switch; it changes to red. A second click puts the starting switch back to green, and the operation with timetables is resumed.

After the last line of a timetable or of an add-on timetable respectively has been completely executed, the message „End of timetable“ appears in the execution window.

Thereafter, you can start the timetable again via the starting switch, or you can return to the main program and select another timetable.

18.15.4 Contacts activated by train

You can display which contacts were not yet made/switched. Click on : The timetable command panel expands in the lower half, displaying all contacts still to be processed.



In this window you can see easily which contacts have been occupied until now.

18.15.5 The "Inspector" of timetable operations

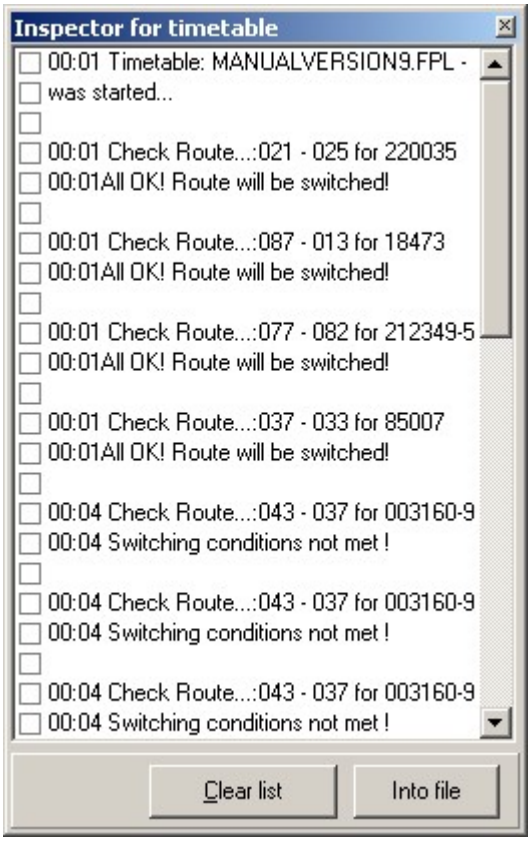
The Inspector supports you to check the order of events and to find bugs. Click at the button in the timetable command centre. The "Inspector" window will open then.

You can **close** the Inspector by clicking at the **same symbol** or by ending the timetable operations .

The Inspector should just be used for fault detecting. It is not recommended to use the Inspector during a correct and smooth operation. Due to additional messages and queries timely delays would affect timetable operations.

The Inspector provides you with important messages in case of irregular operations within a timetable. He just provides you with messages, during active timetable operation (green clock), the queries and messages will stop immediately, if you stop the timetable (red clock).

The Inspector is very useful for fault detecting.



You can also divert the content of the inspector to a text file. With this, you have the possibility to check this file in detail later on.

To do that, click at ***'Into file'*** and a window will open "Save as...". Enter any name and click at ***'Save'***.

Messages of the Inspector („RT" means „Route")

- 00:01 Timetable: (Timetable-Name) –
  was started.....
- 00:01 Check route... : (Route-Name) for (Loc-Class)
  00:01 All OK ! Route will be switched!
- 00:05 Timetable: (Timetable-Name) –
  was stopped.....
- 00:08 Check route... : (Route-Name) for (Loc-Class)
  00:08 Switch conditions not true !
  00:08 Route not yet released !
- 00:12 Check route... : (Route-Name) for (Loc-Class)
  00:12 Other loco blocks destination contact: (starting contact)
  00:24 Route not yet released !
  00:24 Loco still active !
- "STOP ! BUFFER OVERFLOW ..."

Meanings of the inspector messages:.

Message	Reason	Ways to solution
All OK ! Route will be switched!	Everything is OK!	Just for information
Time table: XYZ was started	Start of the timetable with name XYZ	Just for information
Time table: XYZ was started	Manual stop of the timetable XYZ	Just for information
Check route: “XYZ“ for „ABC“	Route ID-Text „XYZ“ is checked for usage with locomotive „ABC“	Just for information
Other loco blocks destination contact: X	Train number display of destination contact is occupied by another locomotive	♦ Remove the locomotive from the destination train number display ♦ Timetable should be checked („Why is train number display still occupied?“, Departure time too early?)
Wrong loco on start contact: X	On the start contact X of the route to switched another locomotive is required	♦ Register correct train number in display ♦ Check timetable if loco-address is correct ♦ Eventually activate the function to register the train numbers automatically before starting the timetable
Route not yet released!	Route can not be switched, because it crosses another active route	♦ Release other route ♦ Timetable should be checked („Why is train number display still occupied?“, Departure time too early?)
No loco on start contact: X	On the train number display of the start contact X not train number has been registered	♦ Register correct train number in display ♦ Check start contact of route (correct number) ♦ Eventually activate the function to register the train numbers automatically before starting the timetable
Loco still active !	Locomotive has never occupied one of the registered contacts of the contact events	♦ Timetable should be checked („Why is train number display still occupied?“, Departure time too early?) ♦ During timetable operation: Maybe old information are still active in the system (e.g. after a manual break). Eventually delete single train numbers from displays (Shift + right mouse button) or delete the content of all train number displays.
Switch conditions not true!	The switching conditions of the route be switched are not fulfilled	♦ Check registrations in route ♦ Timetable should be checked („Have all conditions been considered?“) ♦ Check if all feedback contact still work
STOP ! BUFFER OVERFLOW...	The maximum amount of routes in the buffer has been reached	♦ Increase the size of the buffer in the system settings ♦ Check, why so many routes haven’t been executed yet
Loco „ABC” temporarily locked	Locomotive „ABC“ has actually a blue locomotive number	♦ Switch locomotive number to black

Used abbreviations: see later in this chapter.

18.15.6 Accidents, operation end, delays

The system helps you to resume quickly to the correct operation on your layout, in the event of operating problems .

If an **accident** occurs, e.g. a derailment or a collision, you can simply stop the operation with timetables by a click at the green starting switch or press the function key **F12** on your computer; the green clock changes to red and the timetable is stopped.

Having removed the cause of the accident, you resume operation at the same point of the timetable by clicking once more at the (red) starting switch.

If you want to **leave** the **operation of timetables**, because of an accident or for any other reason, **before** the **timetable has reached its last line correctly**, click on ☒.

The timetable stops and you are questioned:

- Timetable not yet ended! Cancel anyway?
- Current state of operation will be saved automatically!

On ***'Yes'*** the actual timetable line will be saved and displayed later when this timetable is selected again.

A timetable can only be ended- display „End of timetable“ -, after all its contacts were correctly made/switched. If this is not the case you get the message:

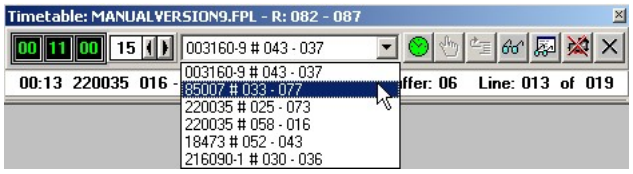
Not all contacts made/switched! Cancel anyway?

On ***'Yes'*** the timetable will be ended without all contact events having been carried out.

If you stop the timetable (the starting switch changes from green to red), the actual timetable line will be automatically saved and displayed later when the timetable is selected again.

The system fills all routes which, due to **train delays** and other **operating troubles,** could not be switched as per specification at the given time, in the routes buffer. The routes buffer display tells you how many routes and which ones are therein.

Through you can carry out or begin the actions for emptying the buffer. It is your decision, how the operation of timetables should continue.



Routes which are switched manually out of the buffer ( ) will be deleted, if they have achieved their release conditions. Follow-on-switching will also be carried out.

If you want to terminate a timetable and the buffer is not yet empty, you get the message:

- Routes buffer not yet processed.

When the maximum number of buffer lines is reached (**4.11.2**), the operation with timetables stops automatically and you get the message:

- Stop! Buffer full!

Manual intervention is needed in both cases.

18.16 Using the automatic with demand contacts

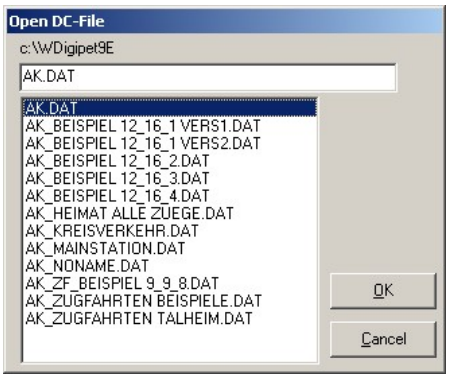
The term is described in section **12.1** in all details.

The registrations in the demand contact editor have all been described in this chapter. This will not be repeated. We also will not list **all** possibilities, how to start/stop the automatic operation.

In the next sections we will always describe and explain the **suggested** possibility.

TIP!
Before starting a timetable you should switch all solenoid devices to their basic settings (see **18.4**).

This helps you to avoid faults during the timetable operations, because of wrongly-switched solenoid devices caused by manual intervention.



18.16.1 Selection of a DC automatic

Click on <File> - <Automatic operation with demand contacts> or on the switch in the toolbar.

Select the DC automatic file to open and confirm your selection with '***OK***'.

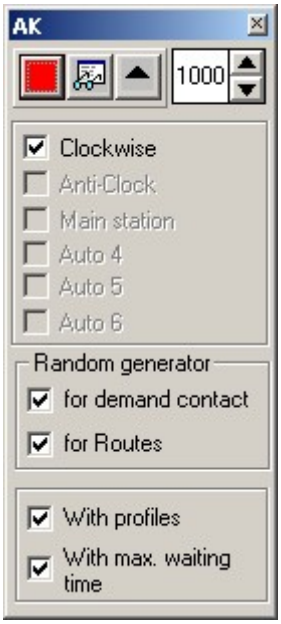
18.16.2 Start and event flow of the automatic operation

A control field appears after you have accessed the automatic operation.

The buttons have the following functions (left to right):

- Start to of the DC (green = Start-Command, red = Stop-Command)
- Open DC-inspector
- Minimize/Maximize window
- Interrogation speed (in milliseconds)
- Buttons for change of interrogation speed

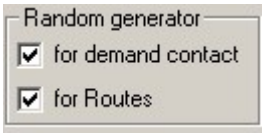
Before starting the automatic operation, select a proper interrogation speed via the buttons. The selected speed depends on different factors.



By default the speed is set to 1000 msec, this means the demand contacts are checked once a second, if routes/tours can be switched. If you want a more frequent automatic operation, then you have to decrease this value, but this depends also on your number of demand contacts.

You can dis-/enable up to six parts of your model railroad layout, when using automatic sections (see **12.3.1**).

Via the two check boxes "Random generator" you can create a very varied automatic with demand contacts.



You can activate random generators for...

- Demand contacts
- Routes.

If you just activate **demand contact**, the contacts are demanded in random order. The routes at one contact are checked one after the other. The first, that can be switched, will be switched and all other routes will be left out.

If you check the **routes**, the routes are chosen randomly. If one route can't be switched, the next one will be selected randomly. If you have registered many routes, it can last rather **long** until a route can be switched.

You can also activate both random generators at the same time and you will achieve a complete random operation.

If you have created profiles for your locomotives/routes you can also de-/activate them with the check box „*With profiles*". If (de)activated the trains will (not) use profiles.

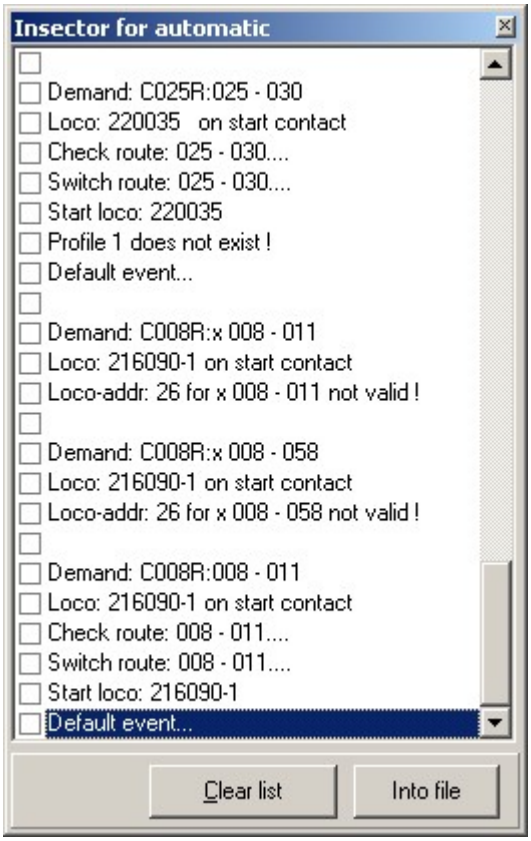
The check box „*With max. waiting time*" is very useful when using tours in your automatic with demand contacts. This waiting time can be set in the system settings on the index card „Program settings – Tours" (see **4.15**). Then tours that can not continue due to a blocked situation etc. will be killed after the waiting time has expired.

If you made all your selections, you activate the automatic operation by click on the red square button; it will change to green.

With the same (now green) button you can stop the automatic operation later.

18.16.3 The "Inspector" of demand contacts operations

The Inspector supports you to check the order of events and to find bugs. Click at the button . The "Inspector" window will open then.



You can **close** the Inspector by clicking at the **same symbol** or by ending the automatic operations.

The Inspector should just be used for fault detecting. It is not recommended to use the Inspector during a correct and smooth operation. Due to additional messages and queries timely delays would affect automatic operations.

The Inspector provides you with important messages in case of irregular operations within a DC automatic. He just provides you with messages, during active automatic operation (green button), the queries and messages will stop immediately, if you stop the automatic (red button).

The Inspector is very useful for fault detecting.

You can also divert the content of the inspector to a text file. With this, you have the possibility to check this file in detail later on.

To do that, click at ***'Into file'*** and a window will open "Save as...". Enter any name and click at ***'Save'***.

Messages of the inspector („R" = Route, „C" = Contact number and „EXIT" = Check next demand contact)

- Inspector from : 07.03.2005
  Start with 21 active demand contacts
- Demand: C021 R: 021 - 025
  Loco: 012081-6 on start contact
  Check route: 021 - 025
  Switch route: 021 - 025
  Start loco: 012081-6
  Running with profile 1:
  021 - 025 + 012081-6
- Demand: C 030 R: 030 - 036
  Loco: 216090-1 on start contact
  Setting for solenoid device #1 addr: 37 WRONG
- Demand: C 058 R: 058 - 016
  Loco: 220035 on start contact
  Setting for solenoid device #1 addr: 036 WRONG

- Demand: C 043 R: 043 - 037
  Loco: 003160-9 on start contact
  Check route: 043 - 037....
  Switch route: 043 - 037....
  Start loco: 003160-9
  Standard...
- Demand: C 058 R: 058 - 016
  Loco: 220035 on start contact
  Setting for solenoid device #1 addr: 036 WRONG
- Demand: C 077 R: 077 - 082
  Loco: 212349-5 on start contact
  Check route: 077 - 082....
  Switch route: 077 - 082....
  Start loco: 212349-5
  Running with profile 1:
  077 - 082 + 212349-5
- Demand: C 087 R: 087 - 013
  Loco: 18473 on start contact
  Setting for solenoid device #1 addr: 036 RIGHT
  Check route: 087 - 013....
  Switch route: 087 - 013....
  Start loco: 18473
  Standard...
- Demand: C 082 R: 082 - 087
  Loco: 212349-5 on start contact
  Check route: 082 - 087....
  082 - 087 Condition (Switch/Release) not true ! = EXIT
- Demand: C 011 Waiting Time BEFORE Route is over
- Demand: C 011 R: 011 - 016
  Loco: 050082-7 on start contact
  Setting for solenoid device #1 addr: 036 WRONG
- Demand: C 025 R: 025 - 030
  Loco: 012081-6 on start contact
  Loco: 216090-1 blocked dest. contact ! = EXIT
- Demand: C 025 R: 025 - 073
  Loco: 012081-6 on start contact
  Check route: 025 - 073....
  Switch route: 025 - 073....
  Start loco: 012081-6
  Profile 1 does not exist!
  Standard...

These are just some example for inspector messages.

All possible inspector messages are listed in the following table.

The meanings of the inspector messages:

Message	Reason	Ways to solution
Start with X active demand contacts	Start of the DC-operation with X active demand contacts	Just for information
Demand: C X Route:“XYZ“	The contact X demand the route with ID-Text „XYZ“	Just for information
Demand: C X Waiting Time BEFORE Route:: Y	The contact X demands after waiting time Y a route	Just for information
Demand: C X Waiting Time BEFORE Route is over	The waiting time (before route) is over for contact X	Just for information
Loco „ABC“ on start contact	Locomotive with class „ABC“ is on the demand contact of the demanded route	Just for information
Loco: X RED = RIGHT	The condition for loco #1/#2 of one route in the DC automatic is fulfilled (X is the locomotives address)	Just for information (The route could be switched if all conditions are fulfilled) **Attention:** If the locomotive has been set to „Show case“ this condition will not be checked and the route can’t be switched)
Loco: X RED = WRONG	The condition for loco #1/#2 of one route in the DC automatic is not fulfilled (X is the locomotives address)	Just for information (The route can’t be switched) **Attention:** If the locomotive has been set to „Show case“ this condition will not be checked and the route can’t be switched)
Loco: X BLACK = RIGHT	The condition for loco #1/#2 of one route in the DC automatic is fulfilled (X is the locomotives address)	Just for information (The route could be switched if all conditions are fulfilled) **Attention:** If the locomotive has been set to „Show case“ this condition will not be checked and the route can’t be switched)
Loco: X BLACK = WRONG	The condition for loco #1/#2 of one route in the DC automatic is not fulfilled (X is the locomotives address)	Just for information (The route can’t be switched) **Attention:** If the locomotive has been set to „Show case“ this condition will not be checked and the route can’t be switched)
Setting for solenoid device #1 addr: X RIGHT!!	The condition for solenoid device #1 of one route in the DC automatic is fulfilled	Just for information (The route could be switched if all other conditions are fulfilled)
Setting for solenoid device #1 addr: X WRONG!!	The condition for solenoid device #1 of one route in the DC automatic is not fulfilled	Just for information (The route can’t be switched)
Check route: „XYZ“...	A demanded route with ID-Text „XYZ“ is checked	Just for information
Switch route: „XYZ“...	A demanded route with ID-Text „XYZ“ is switched	Just for information
Waiting time before departure t „ABC“ : X	Start of the waiting time X before departure of locomotive with class „ABC“	Just for information (The route is switched but the train will wait till the end of waiting time)
Waiting Time BEFORE Route is over	End of the waiting time before departure of locomotive with class „ABC“	Just for information
Turn loco: ABC	The direction of locomotive „ABC“ is changed	Just for information
Start loco: ABC	Locomotive „ABC“ is started	Just for information (In case loco does not start: Check settings in route and locomotive database, sum has to be greater zero)

Message	Reason	Ways to solution
Loco ABC will be blocked at destination !	The locomotive address of the locomotive with class „ABC“ will be switched to red at the destination is no longer valid for the DC automatic.	Just for information
Loco-Adr: X for XYZ not valid!	The locomotive with address X is not allowed for the route with ID-Text „XYZ“ according to settings in the route editor	♦ Change the settings of the route (allow route also for locomotive) ♦ or register an additional route (without address limitation) for this demand contact.
Route for loco:: ABC locked ! = EXIT	The locomotive with class “ABC” is not allowed for the route with ID-Text „XYZ“ according to matrix-settings in the route editor	♦ Change loco type/train length in the route. ♦ Change loco type/train length etc. in locomotive database ♦ Register an additional route (without address limitation) for this demand contact.
No loco on start contact: : X ! = EXIT	The route can not be switched, because no train number is registered on the train number display of the start contact. (This message will only appear if the demand and start contact are different)	♦ Check route if correct start contact is registered
Loco: ABC no STOP command yet! = EXIT	The locomotive with class „ABC“ hasn’t stopped yet.	♦ Remove the locomotive from the destination train number display (Shift + right mouse button).
Loco: ABC blocked dest. contact ! = EXIT	On the train number display of the destination contact another locomotive is registered	♦ Register destination contact in route with switching condition „FREE“ ♦ If destination is free: Remove the locomotive from the destination train number display (Shift + right mouse button)
Loco: ABC No starting speed...!	For the locomotive with class „ABC“ no starting speed has been registered in the locomotive database (=0).	♦ Increase starting speed of locomotive
Loco: ABC brake = 0...!	The sum of the settings from the route for the first, second or brake contact and starting speed from the locomotive database is smaller or equal to zero	♦ Change speed value of braking contact ♦ Increase starting speed of locomotive ♦ Sum has to be greater zero.
Condition (Switch/Release) not true ! = EXIT	The switching conditions of the route are not fulfilled or another crossing route is still active (This message is not in every case an error message, in most cases it is just the information why the route hasn’t been switched yet)	♦ Check switching conditions of route ♦ Check functionality of feedback contacts ♦ Check release condition of route (if route hasn’t been released yet)

18.16.4 Accidents, manual interference, end of automatic operations

The system helps you to resume quickly to the correct operation on your layout, in the event of operating problems.

If an **accident** occurs, e.g. a derailment or a collision, you can simply stop the operations by a click at the green starting switch on your computer; the green button changes to red and the automatic is stopped.

Having removed the cause of the accident, you resume operation by clicking once more at the (red) starting switch.

During the automatic operation you can also switch routes manually, e.g. if a train is blocking because of some fault in the routes or the automatic definition.

Attention!
The computer is able to switch routes faster than you. Inattention could result in a crash.

If you want to **stop** a **train** during automatic operations for a short time e.g. to refill smoke oil, proceed as follows:

- Wait until the train number has reached the train number display, where you want to stop the locomotive.
- Click with the shortcut ALT + right mouse button onto the train number display, the train number will change to RED.
- The stopped locomotive will not be moved any longer in automatic operation.
- If you want the locomotive to continue again, click with the shortcut ALT + right mouse button onto the train number display, the train number will change to BLACK
- The automatic operation will control the train now again.

Trains with RED train numbers can of course be controlled manually with the start-/destination-function.

The automatic operation with demand contacts can be closed at any time by a click on the symbol ☒ in the right top corner; your settings will be saved.

18.17 Tour automatic

The term is described in section **13.1** in all details.

The registrations in the demand contact editor have all been described in this chapter. This will not be repeated. We also will not list **all** possibilities, how to start/stop the automatic operation.

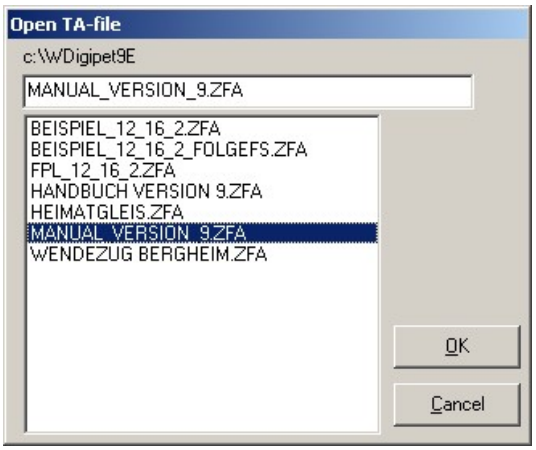
In the next sections we will always describe and explain the **suggested** possibility.

TIP!
Before starting a timetable you should switch all solenoid devices to their basic settings (see **18.4**).
This helps you to avoid faults during the timetable operations, because of wrongly-switched solenoid devices caused by manual intervention.

18.17.1 Selection of a tour automatic

Click on <File> - <Tour automatic> or on the switch in the toolbar.

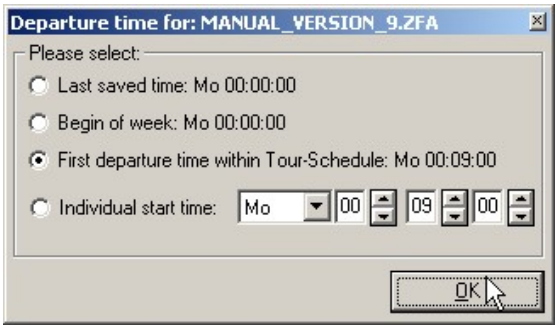
Select the TA automatic file to open and confirm your selection with ***'OK'***.



18.17.2 Start and event flow of the automatic operation

After the selection of TA file a window called "Departure time for:…ZFA" will appear.

In this window you can select the start time of the model railroad time for your tour automatic.



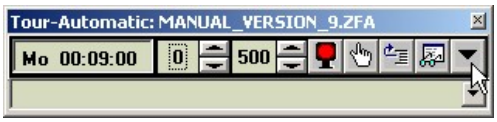
You can select between...

- Start with last saved,
  If you have interrupted the tour automatic and want to continue at the same time
- Start at beginning of week, e.g. if you a layout for presentation and you want to present always the same automatic

- Start with first departure time within tour schedule, if you have created a tour automatic similar to the timetable
- Start with individual time, the selected time is the point of time at which the first train could start.

Having made all selections, you confirm them with the button **'*OK*'.**

The control Center of the tour automatic will appear now.



Here you can set several options concerning your tour automatic. All buttons and field are also explained by tool tips.

In the headline you will see the name of the opened tour automatic file and below on the left side the current day of week and time.

Next to it, the white panel displays the time factor (1...360).

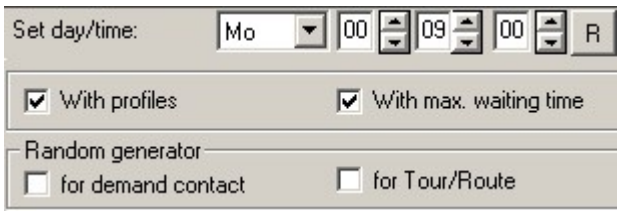
You can alter it with the arrows at its right, even while the tour automatic is running.

In the field in the middle you can see the interrogation, which has the same function as in the DC automatic, you can select a value between 100 and 1000 msec.

In the comment panel below with the selection arrow the contents of the route/tour buffer are indicated. The buffer contains routes/tours that were not executed until now due to a delay.

The symbols  have the following functions (left to right):

- Start/Stop of the tour automatic (green = Start command, red = Stop command)
- Switching routes/tours manually from the buffer
- Delete routes/tours from buffer
- Open automatic inspector
- Show or hide setup/options



If you click on the right button, the window will enlarge and offer additional options.

Day and time can be reseted to Monday 00:00:00 with the button R.

If you have created profiles for your locomotives/routes you can also de-/activate them with the check box „*With profiles*“. If (de)activated the trains will (not) use profiles (see also **4.14.1** and chapter **10**).

The check box „*With max. waiting time*“ is very useful when using tours in your automatic with demand contacts. This waiting time can be set in the system settings on the index card „Program settings – Tours“ (see **4.15**). Then tours that can not continue due to a blocked situation etc. will be killed after the waiting time has expired.

If you checked this option, a tour with exceeded waiting time will be treated as follows...

- in the tour automatic with **unchecked** „*With max. waiting time*“...
  - the tour will be stopped
  - the tour will be marked RED in the tour event inspector
  - the train number remains GREEN
  - **no** audible or visible warning will appear
- in the tour automatic with **checked** „*With max. waiting time*“... **without** alternative route/tour within the tour automatic...
  - the tour will be stopped
  - the train number will be switched from GREEN to BLACK/WHITE
  - the tour will be marked RED in the tour event inspector with a hourglass
  - a sound warning will be played and a message will appear for a short time, if not disabled in the system settings
  - you have to remove the blocked situation, afterwards select the tour in the tour event inspector and restart the tour with the button
  - or you have to continue the train manually with a tour or route, then the tour will be deleted automatically from the inspector
- in the tour automatic with **checked** „*With max. waiting time*“...**with** alternative route/tour within the tour automatic...
  - the tour will be stopped
  - the train number will be switched from GREEN to BLACK/WHITE
  - the tour will be marked RED in the tour event inspector with a hourglass
  - a sound warning will be played and a message will appear for a short time, if not disabled in the system settings
  - the tour will remain in the tour event inspector until the train is continued by the tour automatic

Via the two check boxes “Random generator“ you can create a very varied tour automatic.

You can activate random generators for...

- Demand contacts
- Routes /Tours.

If you just activate **demand contact**, the contacts are demanded in random order. The routes at one contact are checked one after the other. The first, that can be switched, will be switched and all other routes will be left out.

If you check the **routes**, the routes are chosen randomly. If one route can't be switched, the next one will be selected randomly. If you have registered many routes, it can last rather **long** until a route can be switched.

You can also activate both random generators at the same time and you will achieve a complete random operation.

Information!
All settings made for your tour automatic will automatically saved when closing the tour automatic and reloading when opening the tour automatic again.

If you made all your selections, you activate the automatic operation by click on the red button ; it will change to green.

With the same (now green) button you can stop the automatic operation later.

18.17.3 Tour event inspector

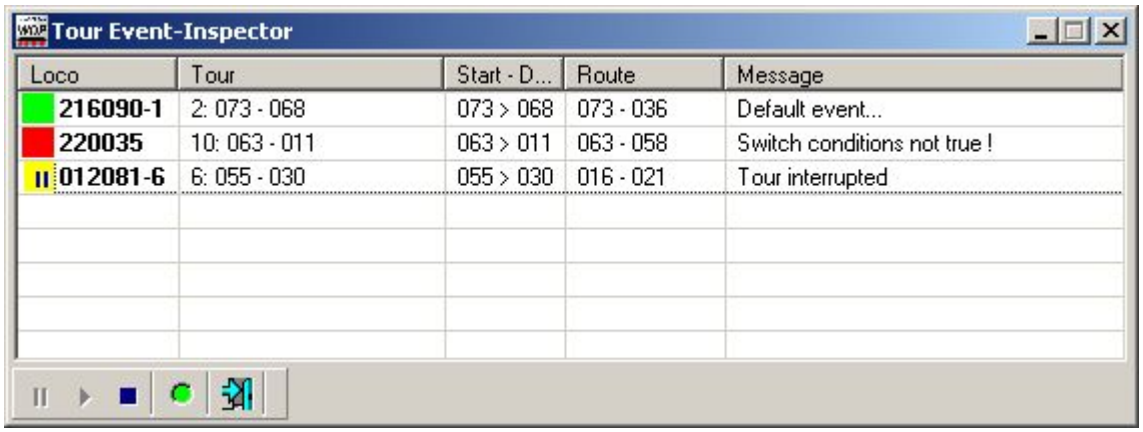
Every time you the first tour/route of your tour automatic has been started, the tour event inspector will appear.

The column „Loco" indicates the current state of the locomotive...

- green/red = drives/stopped and
- yellow = tour manually stopped (pause)
- red hour glass = tour stopped because of expired waiting time

The column „Route" indicates the currently requested route.

The window of the tour event inspector can be resized windows typically in the same way as many of the program's windows (windows typical).



With the buttons at the left bottom, the selected tour from the list can be paused, restarted and killed.

With the round green button **all** tours can be paused and restarted (see **9.10**).

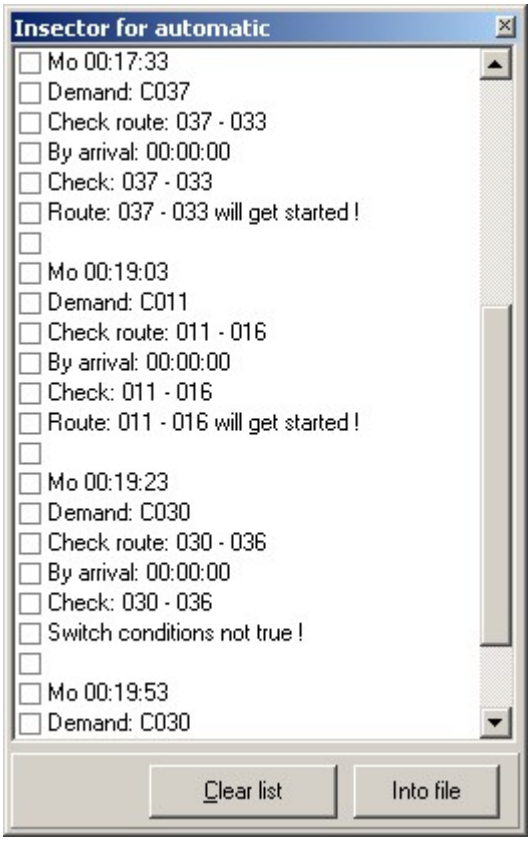
With a double click on a line in the inspector the locomotive control of the corresponded locomotive can be opened.

Important!
Never drive a train of an **active** tour manually or delete the train number in the track diagram, before you have killed or paused this tour.

With the symbols and you close the tour event inspector.

18.17.4 The "Inspector" for automatic

The Inspector supports you to check the order of events and to find bugs. Click at the button . The "Inspector" window will open then.



You can **close** the Inspector by clicking at the **same symbol** or by ending the automatic operations.

The Inspector should just be used for fault detecting. It is not recommended to use the Inspector during a correct and smooth operation. Due to additional messages and queries timely delays would affect automatic operations.

The Inspector provides you with important messages in case of irregular operations within a tour automatic. He just provides you with messages, during active automatic operation (green button), the queries and messages will stop immediately, if you stop the automatic (red button).

The Inspector is very useful for fault detecting. You can also divert the content of the inspector to a text file. With this, you have the possibility to check this file in detail later on.

To do that, click at ***'Into file'*** and a window will open "Save as...". Enter any name and click at ***'Save'***.

Messages of the inspector („R" = Route, „C" = Contact number and „EXIT" = Check next demand contact)

- Inspector from: 07.03.2005
- Mo 00:00:00
  Demand: C 011
  Check route: 011 - 016
  By arrival: 00:00:00
  Check: 011 - 016
  Route: 011 - 016 will get started !

- Mo 00:00:00
  Demand: C 030
  Check route: 030 - 036
  By arrival: 00:00:00
  Setting for solenoid device #1 addr: 37 WRONG
- Mo 00:00:00
  Demand: C 037
  Check route: 037 - 033
  By arrival: 00:00:00
  Check: 037 - 033
  Route: 037 - 033 will get started !
- Mo 00:00:00
  Demand: C 043
  Check route: 043 - 037
  By arrival: 00:00:00
  Check: 043 - 037
  Switch conditions not true !
- Mo 00:00:00
  Demand: C 058
  Check route: 058 - 016
  By arrival: 00:00:00
  Check: 058 - 016
  Loco: 050082-7 blocks destination contact !
- Mo 00:00:15
  Demand: C 077
  Check route: 077 - 082
  By arrival: 00:00:00
  Check: 077 - 082
  Route: 077 - 082 will get started !

These are just some examples for inspector messages.

The meanings of the inspector messages .

Message	Reason	Ways to solution
Mo 01:10:00!	Weekday and time	Just for information
Demand: C X	Tour/route is demanded	Just for information
Check route: “XYZ“	Route with ID-Text „XYZ“ is validated	Just for information
Check Tour: “XYZ	Tour with ID-Text „XYZ“ is validated	Just for information
Check buffer: C X	Buffer is validated	Just for information
Next departure: „XYZ“	Next departure is at XYZ	Just for information
By arrival: „XYZ“	Waiting time after arrival of locomotive	Just for information
Tour "XYZ" max. delay exceeded	Tour can not be switched, because max. delay has been reached	Just for information

The meanings of the inspector messages are:

Message	Reason	Ways to solution
Tour "XYZ max. delay exceeded	Tour can not be switched, because max. delay has exceeded	Just for information
Setting for solenoid device #1 addr: xxx WRONG	Solenoid device is switched to wrong state	Just for information
Tour already active !	Tour is already active	Just for information
Departure time not reached !	The departure time not reached	Just for information
Departure time after arrival not reached !	The departure time after arrival not reached	Just for information
Only if contact: "XYZ“ = Free or Occupied	Contact YXZ is until not free or occupied	Just for information
Loco: "ABC" BLACK = RIGHT	Loco ABC is BLACK	Just for information
Loco: "ABC" BLACK = WRONG	Loco ABC is not BLACK	Just for information
Loco: "ABC" RED = RIGHT	Loco ABC is RED	Just for information
Loco: "ABC" RED = WRONG	Loco ABC is not RED	Just for information
Loco: " ABC" = Direction of travel RIGHT!	The direction of travel of locomotive ABC is not right	Just for information
Loco: " ABC" = Direction of travel WRONG!!	The direction of travel of locomotive ABC is not wrong	Just for information ♦ Change eventually travel direction of loco ABC
Loco: "ABC" blocks destination contact !	The locomotive ABC blocks destination contact	Just for information ♦ Remove locomotive number of dest. contact
Tour: " XYZ" will get started!	The tour with „XYZ“ will get started !	Just for information
Route: "XYZ" will get started !	The route with „XYZ“ will get started !	Just for information
Turn loco: "ABC“	Loco ABC is turned	Just for information
Other loco: "ABC" not on contact: X	Locomotive “ABC” is not on train number display with contact X	Just for information
Loco: "ABC" but departure is locked !	The locomotive with class „ABC“ is still locked/ switched to red (locked for DC/by arrival)/Blue (Timetable/Departure time)	Just for information ♦ Check Solenoid device switching state ♦ Check tour/route
No loc on Start-Loc number panel	The route can not be switched, because no train number is registered on the train number display of the start contact.	♦ Check route/tour if correct start contact is registered
Switch conditions not true !	The switching conditions of the route are not fulfilled or another crossing route is still active (This message is not in every case an error message, in most cases it is just the information why the route hasn’t been switched yet)	♦ Check switching conditions of route ♦ Check functionality of feedback contacts ♦ Check release condition of route (if route hasn’t been released yet)
Route still blocked!	Solenoid devices still locked	♦ Check route and release it if necessary
TA-line for loc: "ABC" locked !	TA row locked for locomotive “ABC”	♦ Tour automatic-matrix(Loco-, wagon-type and train length) of this TA-row should be checked
Loco-addr: "ABC" disabled for TA-line !	TA row disabled for locomotive “ABC”	♦ Locomotive addresses “Lock indiv. loc” of this TA-row should be checked
Loco-addr: "ABC" not valid for TA-line !	TA row not valid for locomotive “ABC”	♦ Locomotive addresses “Release only for” of this TA-row should be checked
Loco-addr: "ABC" for "XYZ" disabled!	Route "XYZ" disabled for locomotive “ABC”	♦ Locomotive addresses “Lock indiv. loc” should be checked in route “XYZ”
Loco-addr: "ABC" for "XYZ" not valid !	Route "XYZ" not valid for locomotive “ABC”	♦ Locomotive addresses “Release only for” should be checked in route “XYZ”
Route for loco: "ABC" locked !"	Route locked for locomotive “ABC”	♦ Route-matrix(Loco-, wagon-type and train length) should be checked in route “XYZ”

18.17.5 Accidents, end of operations, delays

The system helps you to resume quickly to the correct operation on your layout, in the event of operating problems.

If an **accident** occurs, e.g. a derailment or a collision, you can simply stop the operations by a click at the green starting switch on your computer; the green button changes to red and the automatic is stopped.

Having removed the cause of the accident, you resume operation by clicking once more at the (red) starting switch.

The tour automatic operation can be closed at any time by a click on the symbol in the right top corner. If you have still active tours at this moment, a security request will appear. If you click then on ***'Yes'*** this tours will be killed, the tour automatic ended and trains just drive to the destination of their active routes and then the operations on your model railroad layout will come to an end.

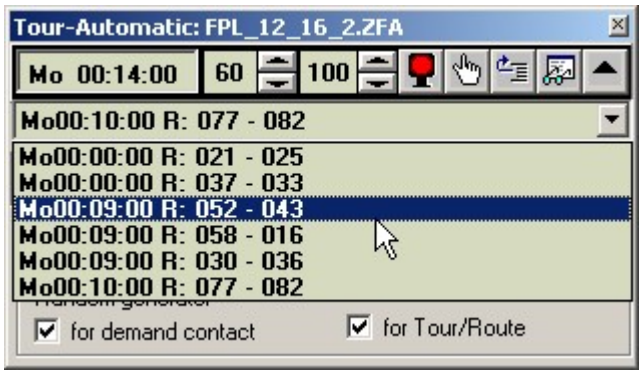
If you want to stop the tour automatic temporarily click on the button (the button will change to red).

The system fills all routes/tours which, due to **train delays** and other **operating troubles,** could not be switched as per specification at the given time, in the routes/tours buffer. The buffer display tells you how many routes and which ones are therein. But only tours/routes with *"Departure time"* and the symbols or in the column "C" will appear in the buffer. This buffer is treated similar to the timetable operations.

Tours/routes with selected *"By arrival"* and the symbol will not appear in the buffer.

Through you can carry out or begin the actions for emptying the buffer. It is your decision, how the tour automatic should continue.

Routes/Tours which are switched manually out of the buffer ( ) will be deleted, if they have achieved their release conditions. Follow-on-switching will also be carried out. If you want to **delete** routes/tours out of the buffer you can use the button . Via the combo box displaying the buffer, you can select which buffer rows to switch or delete.



18.18 Keyboard shortcuts in WIN-DIGIPET 9.0

The main program of **WIN-DIGIPET 9.0** gives access to several functions by shortcuts.

With the key...

- **F1** you call the help function
- **F2** all Loco-controls get minimized and arranged at the top
- **F3** all Loco-controls get minimized
- **F4** all Loco-controls get closed
- **F5** you increase the zoom factor (Zoom +)
- **F6** you decrease the zoom factor (Zoom -)
- **F7** all active routes are deleted
- **F8** all locomotives can be stopped and started respectively
- **F9** you cause an emergency stop
- **F11** you can get from one open window to the next one
- **F12** the time table operation is stopped.

For changing of the train number symbol...

- RED 08 and BLACK 08 ALT + right mouse button
- BLUE 21 and BLACK 21 ALT and Shift + right mouse button
- To delete it the train number Shift + right mouse button

The additional key (e.g. ALT) has to be hold down while clicking (see **18.11.10)**.

Start-/Destination-function for routes (see **18.5.1**).

- Click with right mouse button on the start and then on the destination.

Start-/Destination-function for tour (see **18.7.1**).

- Click with the middle mouse button on the start and then on the destination
- Click with STRG + right mouse button on the start and then on the destination.

Automatic route recording (see **8.5**)

- Click with Shift + left mouse button on the start and then on the destination.

In an active locomotive control...

- the key **UP**- and **RIGHT**-arrows increase the speed
- the key **DOWN** - and **LEFT** -arrows decrease the speed
- the **END** key accelerates to the maximum speed
- the key **HOME** and the **SPACE BAR** stop the locomotive immediately
- the keys „**D**“ and „**R**“ change the driving direction
- the key „**F**“ switched the locomotive’s function on and off
- the key „**S**“ activates the locomotives sound
- the keys „**1**“ to „**8**“ switch the function f1 to f8 on and off.

18.19 Abbreviations in WIN-DIGIPET 9.0

The most common abbreviations in **WIN-DIGIPET 9.0** are (also German abbreviations because they are sometimes used for filenames)...

CU	Märklin Central Unit
DC/AK	Automatic with demand contacts
FB/RMK	Feedback contact
FB/RM-Module	Feedback module
FPL	Timetable
GB	Track diagram
HSI	LDT High Speed Interface
IB	Intellibox
Loc-DB	Locomotive-database
MA	Solenoid device
PDB	Profile database
R/FS	Route
T/ZF	Tour
TA/ZFA	Tour automatic

18.20 Closing WIN-DIGIPET 9.0

If you want to leave the program you can use the button in the toolbar of the main program.

Your data will be saved when leaving **WIN-DIGIPET 9.0** and some settings are also automatically stored in the registry.

19 – ANSWERS TO FREQUENTLY ASKED QUESTION (FAQ)

19.1 „Which contact type should I use for computer controlled layouts?“

There are two types of contacts: Transient and permanent contacts.

Let us deal here with the Märklin HO system.

Transient contacts are **switch tracks** (activated by the loco pick-up), **Reed contacts** (activated by a magnet attached under the rolling stock/locomotives) and infrared activation.

The entire above are **not very suitable** for computer control as they only issue a short pulse. To receive a feedback, two emitters/transmitters and a relay are necessary at each feedback point to achieve a longer feedback. This is not visible on a model railroad layout with computer control, as quite a number of feedback points are required.

Computer control requires **permanent** contacts, known as contact track (not to be confused with switch track). A piece, a „track“, with both outer tracks electrically insulated from each other and connected to the input of an s88.

As a locomotive/carriage passes with its metal wheels/axles over the contact track, they connect the outer rail to ground. Contact tracks are closed (making contact) as long as a train passes over it or stops on it. Therefore, these contact tracks are very suitable and can easily be achieved in the Märklin H0 system.

When using **K-track** by Märklin, cut **one** track to the desired length and connect it to the s88.

It is as simple with **C-track** by Märklin: Disconnect the ground connector on one side of the track connectors.

Using **M-track**, **M**- contact track and extension by Märklin has to be used (or possibly other track occupation detectors from different manufacturers).

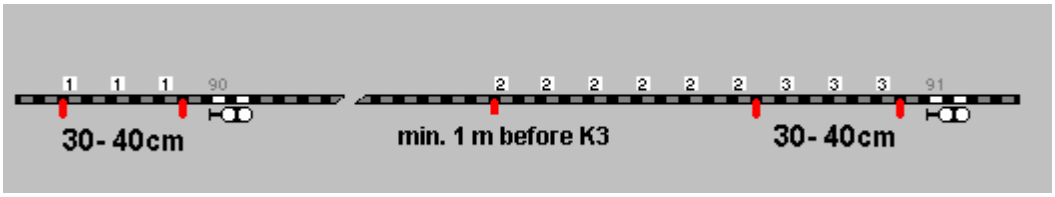
19.2 „Where should I position my contacts ?"

As a rule, an approx. 30-40cm long contact area should exist in front of each signal on the layout. This is known as the stop contact. Commands are sometimes not correctly transmitted to the locomotives, if the contact area is too short.

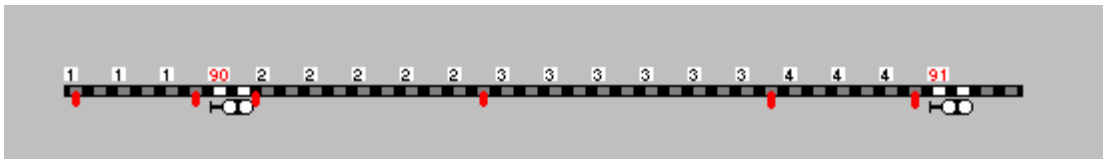
A contact area must be present at the place where you like an event should take place (light, Telex, deceleration, acceleration, etc.).

A Block consists of a minimum of 3 contact areas:

Start contact – Deceleration contact – Stop contact.



It is safer in the model railroad operation to allocate contacts to the whole block. An accident can occur, if carriages stop on the track that does not have sufficient contacts.



The input for the switching conditions of the route is:

Switch, if **K2**, **K3** and **K4 FREE** and **K1 Occupied**,

Release, if **K4** is **Occupied**.

In addition, several contact events could be recorded in the timetable-, routes- and profile-editor.

19.3 „What's the difference between switching and release conditions?"

(see **8.7** to **8.7.2**)

SWITCHING-Condition

A route can only switching if all switching conditions are fulfilled. When operating timetables, a route is send to the buffer if the switching conditions aren't fulfilled. In manual operation using the start/destination function a warning is displayed.

RELEASE- Condition

After switching a route – switching conditions were fulfilled – the solenoid devices (depending of settings under *"Locked are:")* belonging to this route get **locked**. Another route containing one or more of this solenoid devices can't be switched until the release condition of the actual route is fulfilled and the solenoid devices of this route get unlocked.

Switched routes can only be deleted automatically from the screen, when release conditions were entered in the routes editor.

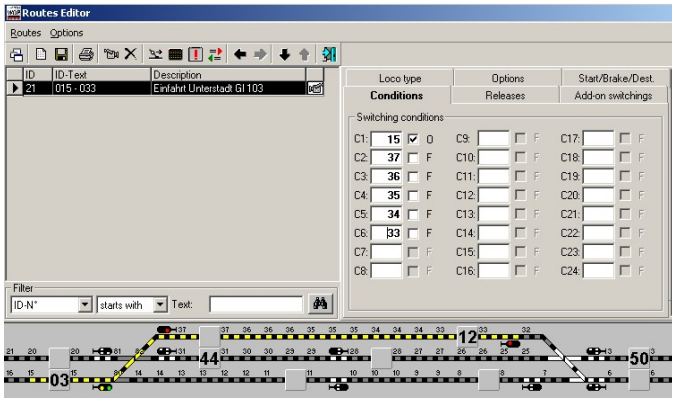
START- und DESTINATION- Contacts

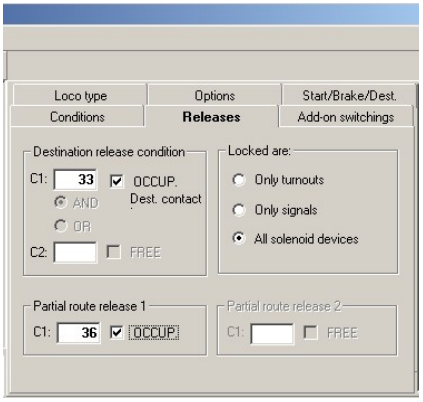
Every route has a start and a destination contact. The start contact is in front of the start signal and the destination contact is at the last signal of the route. These fields in the routes editor are important for the transmission of train numbers from start to destination train number symbol. After switching the route, the train number is transmitted from the start to the destination train number symbol. The transmission mode depends on your selection in the system settings (“Blank, if start contact is free, display, if destination contact is occupied“ or „Jump from start to destination contact without contact interrogation“).

The destination contact of the first route is the start contact of the following route.

Routes **shall** and **have to** have switching and release conditions!

Let’s have a look at one example for switching and release conditions. A train ought to drive from contact **15** into track **3** to contact **33**.





In the routes editor you enter on the index card „Conditions“:

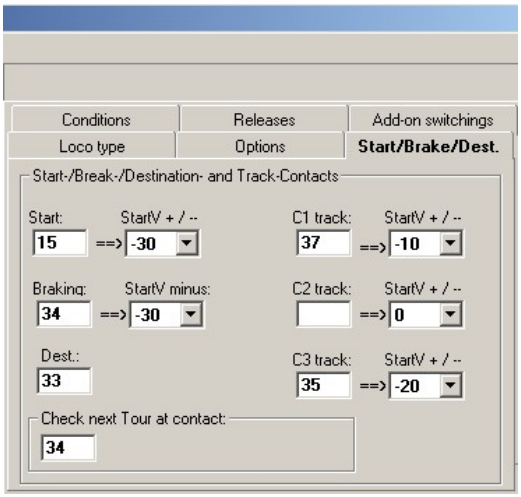
- Switch, if contact **15** is **Occupied**
- and contacts **33 to 37** are **FREE**.

On the index card „Release“ enter:

- Partial Release 1, if contact **36** is **Occupied**
- Release, if contact **33** is **Occupied**.

On the index card „Start/Brake/Destination“ enter as a minimum:

- Start contact: **15**
- Brake contact: **34**
- and destination contact: **33.**



The train **26**, waiting on contact **31** on track **2,** ought to drive over the crossing W3, has to wait until the train heading for track **3** has reached contact **36**.

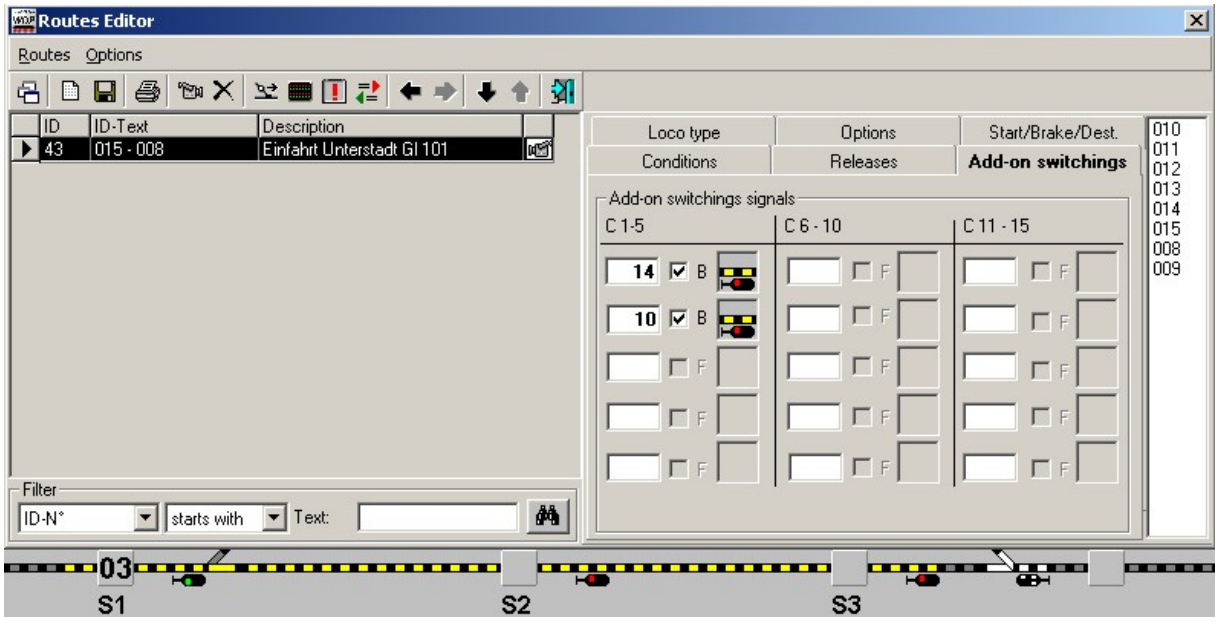
After reaching this contact W3 will be unlocked.

19.4 „Can I switch a signal while my train is driving?“

Example 1:

Imagine, you created a route via to block systems from signal S1 via S2 to signal S3. You recorded the route with S1 green, S2 green and S3 red. After passing the first signal S1 ought to switched to red and also signal S2 should be switched to red after passing of the train.

This plan can be realised on the index card „Add-on switching“.



The list field on the right side shows all contacts of the current route. Transfer contact number 14 from this list field via drag & drop into the contact field **K1;** Alternatively you can enter the contact number via keyboard into this field.

Now click on the signal S1 in the track diagram and transfer it via drag & drop into the picture box beside of „O“ (=Occupied. The signal is still displayed with green setting. Now click on the signal in the picture until the setting is red.

This entry means:
Switch signal **S1** to **red**, when contact **14** is **Occupied**.

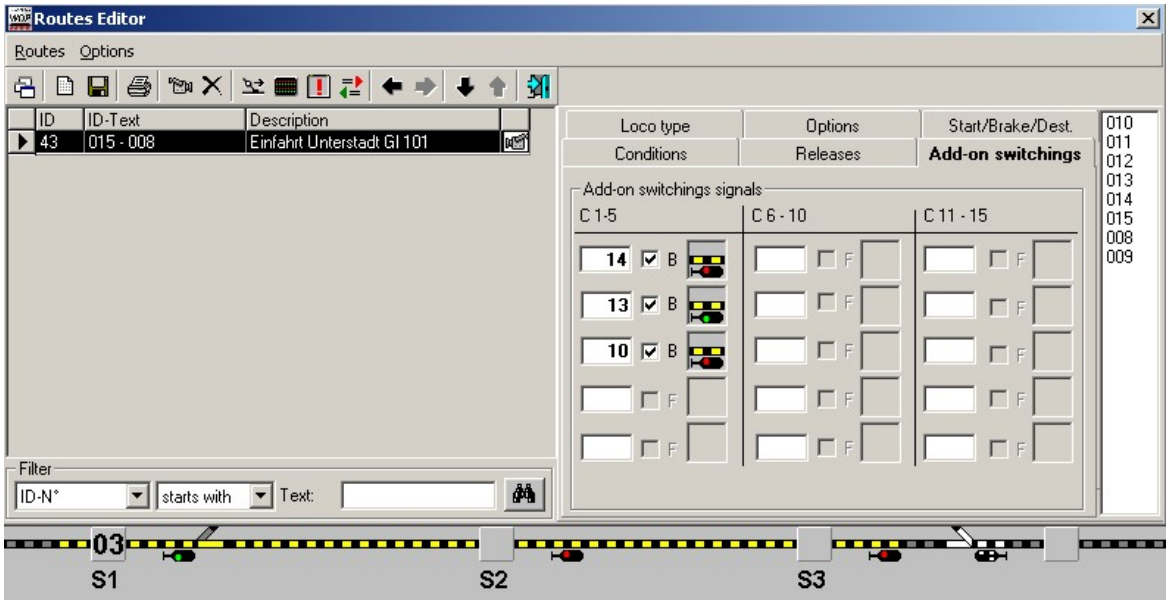
Continue with the entries for S2 the same way. This signal ought to be switched to red after reaching contact 10 behind the signal.

This entry means:
Switch signal **S2** to **red**, when contact **10** is **Occupied**

Example 2:

Imagine, you created a route via to block systems from signal S1 via S2 to signal S3. You recorded the route with S1 green, S2 **red** and S3 red. After passing the first signal S1 ought to switch to red at contact 14. Signal S2 should be switched to green by driving train at contact 13 and back to red after passing of the train at contact 10.

This plan can be realised on the index card „Add-on switching“ with the following entries:

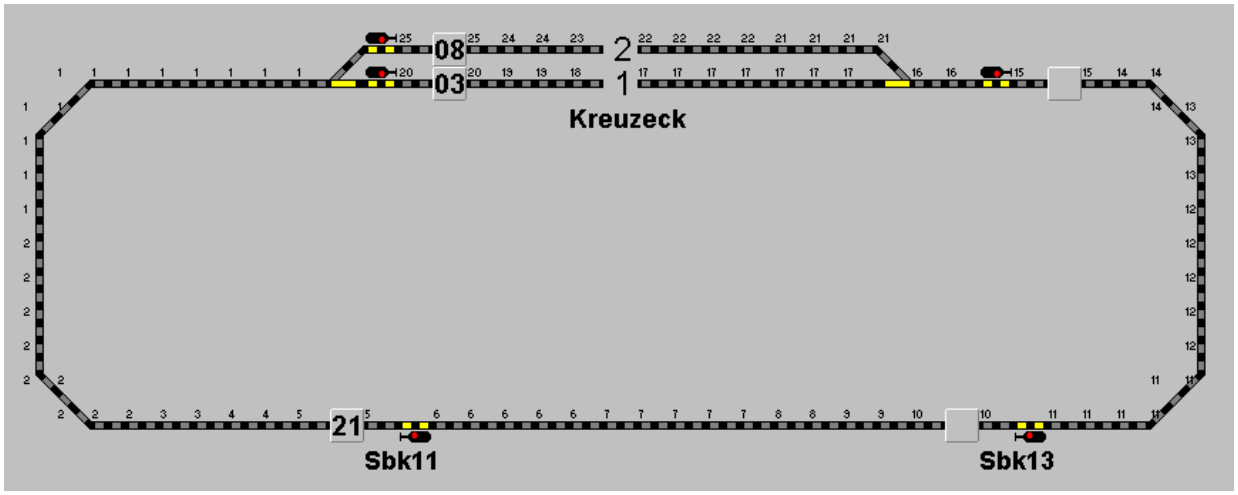


The entries are:
Switch signal **S1** to **red**, when contact **14** is **Occupied** („O“).
Switch signal **S2** to **green**, when contact **13** is **Occupied** („O “).
Switch signal **S2** to **red**, when contact **10** is **Occupied** („O “).

19.5 „My train number tracking does not work or does not work correct?"

The requirements for correct displaying of train numbers are:

- You have placed train number symbol in your track diagram
- You have entered feedback numbers **for every train number symbol**
- In the routes editor you have entered for every route a feedback number for the start contact and another feedback number for the destination contact.



- Start contact: 05 Destination contact: 10
- Start contact: 10 Destination contact: 15

- Start contact: 15 Destination contact: 20
- Start contact: 15 Destination contact: 25
- Start contact: 20 Destination contact: 05
- Start contact: 25 Destination contact: 05

Destination contact 10 is also the start contact for the next route and so on.

Thus routes are **linked logically**. You have can only make an error if the destination contact is not the start contact of the next route.

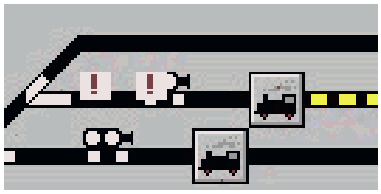
The train number displays only work correct, if locs/trains are driven with routes (Start-/Destination function, timetable operation, demand contact operation or tour-automatic).

19.7„Why are routes not switched and displayed properly ?“

You could have made additional changes in the track diagram !

All routes which operate via changed symbols must be **corrected**, if you have made additional changes to the track diagram, using the ‘*Track diagram editor*’.

An automatic warning is issued in Win-Digipet when displaying a route. A **red exclamation mark** indicates a mismatch between the track and route symbols.



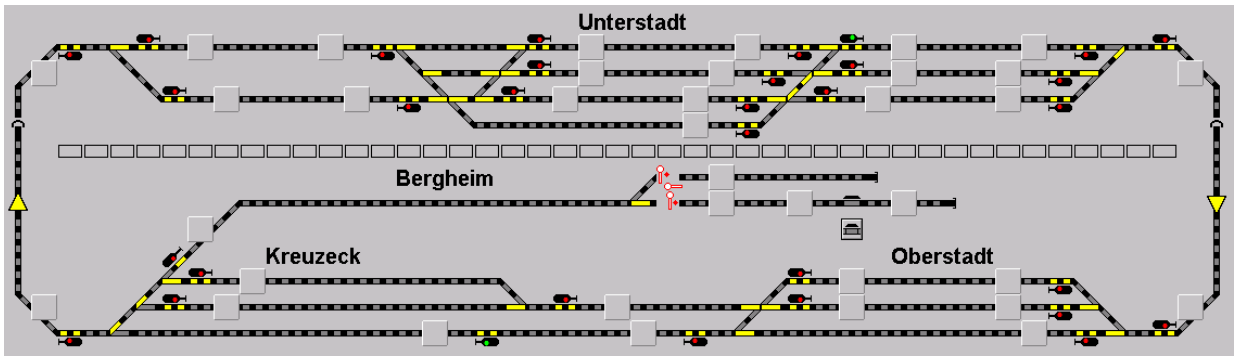
In this case change to the *Routes editor* and select the appropriate routes. Click on **Record**, sweep over the areas in the route to be corrected, and save the changes.

Click in the menu bar of the routes editor on ‘Options’ and ‘Check route recording’ or on the switch in the toolbar (see **8.14**), to automatically **check all recorded** routes.

Please also observe, whether or not possible **follow-on switching** of signal and conditions has to be re-recorded !

19.8 „How are levels in the layout displayed (symbolically) ? "

With this little example we want to show how to solve this easy and clearly arranged. **WIN-DIGIPET 9.0** is not a track planning program with layer over layer, so all routes have to be displayed in an easy and clear way.

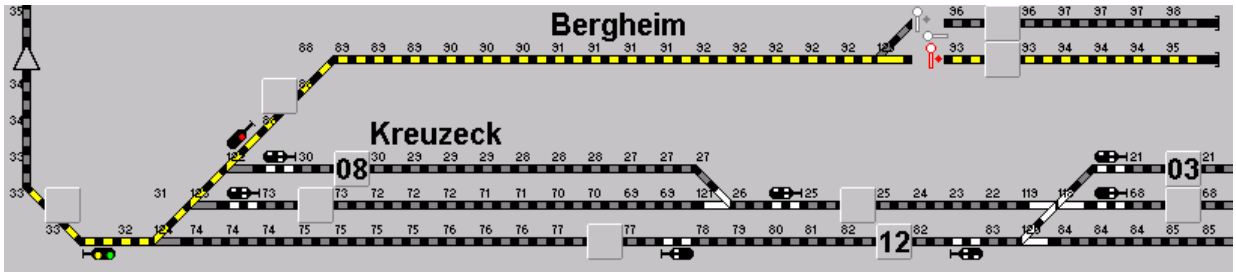


The upper part of the track diagram with the hidden station Unterstadt has been separated spatial from the lower part with the small parting line.

The stations Bergheim, Kreuzeck and Oberstadt are the parts of the layout which can be seen by the viewer.

19.9 „How are partial routes released in long routes ?“

This example intends to show you how to cause more lively operation on your model railroad layout. This aim can be reached by defining up to two partial routes for longer routes. Partial routes can be released before the train arrives at the final destination of this route.



The train ought to drive a long route from contact **33** (start) to **95** (destination) .

After switching the route all solenoid devices that you selected under **„Locked are:“**, are locked.

Without partial releases all trains possibly waiting at contacts **73** and **30** before their signal would have to wait until the train from **33** to **95** has reached his destination (Destination release condition: contact **95 Occupied**). Then all locked solenoid devices get unlocked.

You can get a more lively operation mode by using partial releases. In the routes editor you can define partial releases for this route as follows (see also **8.4**) :

- **Recording partial release 1**
  Select by clicking with your left mouse button in the window „Recording“ the symbol 1▸ and mark with the mouse afterwards all symbols in your track diagram belonging to partial release 1. For partial release 1 these are in this case all track symbols with feedback number 33 left and right of the train number symbol and of course also the train number symbol; this is important. Click also on the signal right of the train number symbol until it shows Hp2 (green/yellow). The track symbols for partial release 1 are marked red and at left side of the signal a little 1 is displayed.

- **Recording partial release 2**
  Select by clicking with your left mouse button in the window „Recording“ the symbol 2▸ and mark with the mouse afterwards all symbols in your track diagram belonging to partial release 2. For partial release 2 these are the track symbol with number 32, turnout 97 with feedback number 124, the track symbol with number 31 and the turnouts 96 and 95 with feedback numbers 123 and 122.

  For the turnouts you have to select the correct position, so that the train can reach Bergheim. The route will be marked in yellow/red and the turnouts show a little 2 in the upper left corner – these marks show that this track symbols belong to partial release 2.

- **Recording the remaining part of the route**
  Select by clicking with your left mouse button in the window „Recording“ the symbol ▶ and mark the remaining part of the route from signal 61/62 to the bumper with track symbol 95.

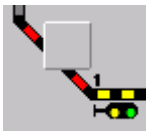
  Mark all remaining symbols with the mouse. The symbols are marked in yellow. Take care for the correct position of the two signals and the turnout.

The recording should look like this:

The release condition and the partial releases have to be set on the index card „Releases“ as follows:

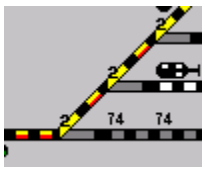
- Partial release 1 not until contact 88 is occupied
- Partial release 2 not until contact 91 is occupied
- Release remaining part not until contact 95 is occupied

The releases work now as follows:



- When the train heading from 33 to 95 reaches contact **88**, track 33 and the start Signal (marked with the small **1**) are released.

  A train waiting in the hidden station can now follow although the train from 33 to 95 has **not** reached his destination yet.



- Partial release 2 works similar. When reaching contact **91**, track 32 and the 3 turnouts (marked with the small **2**) are released.

  A train waiting at **73** or **30**, although the train to Bergheim is still on his way.

The remaining part of the route is released when contact **95** has been reached.

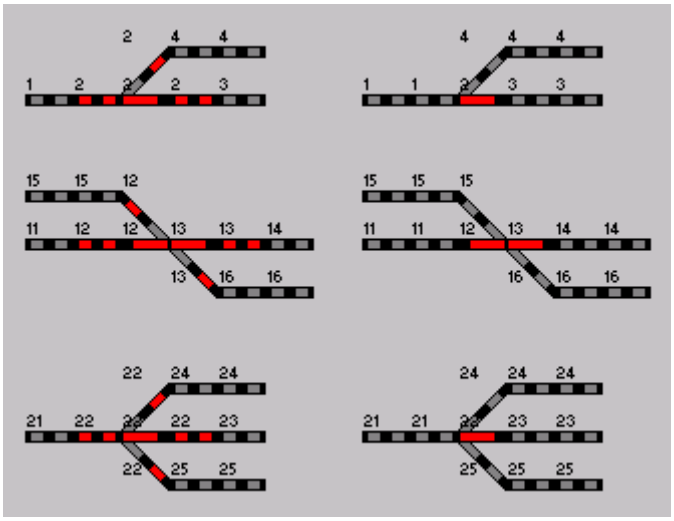
19.10 „Should I pay attention on something special concerning turnouts with feedback numbers?“

For the first time **WIN-DIGIPET 9.0** allows assigning in the track diagram feedback numbers to turnouts. But this feedback is not meant for position feedback, but for real occupied feedback in the same way as normal track symbols offer this.

Concerning these turnouts (simple turnout, crossings and three-way turnouts) you have to pay attention on the following:

- The turnouts on your model railroad layout have to be prepared for the feedback messages. Only the turnout and at most one short simple track should be designed to be used for the occupied feedback. This applied to all three/four ports of the turnout.
- You should never include a longer rail track, because this would cause problems if this rail track is occupied.
- In the track diagram of **WIN-DIGIPET 9.0 only the turnout** is assigned with one respectively two feedback numbers.
- When recording routes also the turnouts are included into the switching conditions.

For exacter explanation the three following examples are used.



The simple turnouts have three and all other turnouts have four ports, which can be included into the feedback.

The left pictures show the real situation on the model railroad layout with one short rail track per port. All other rail tracks are isolated and belong to other feedbacks.

The crossing offers two feedback contacts.

The right pictures show how you should place the turnouts with the feedback numbers in the track diagram of **WIN-DIGIPET 9.0**. Only the turnouts are assigned with the feedback numbers, so that you get an occupied feedback as shown in the picture.

Important notice!

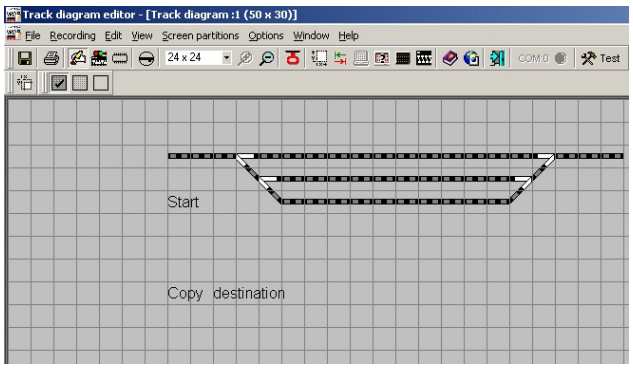
If you would assign the simple turnout in the picture with feedback number 4, because you have no separation between 2 and 4, the turnout would be marked permanently occupied, when a train occupies feedback contact 4. This concerns all turnouts and their ports.

If you pay attention to these points you will have no problems with turnout occupied feedbacks in **WIN-DIGIPET 9.0**.

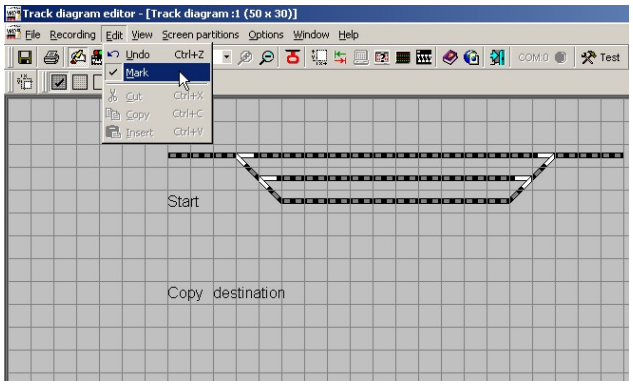
19.11 „Hints for cutting, copying and pasting parts of your track diagram!“

When cutting, copying and pasting parts of your track diagram you have to pay attention one some points (see also **6.3.7)**, because it is quite different to other windows applications.

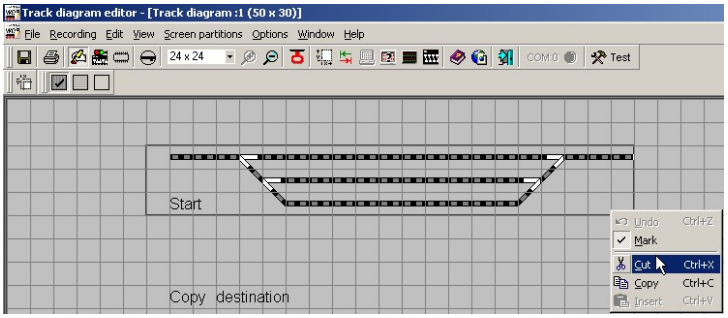
Here one step by step guide for cutting and pasting:



- The initial situation is shown in this picture. A port of the diagram ought to be copied under the text „copy here“.



- For cutting a part of the track diagram select in the track diagram editor the menu command <Process> <Mark>, so that it’s checked. You can deactivate this mode in the same way.

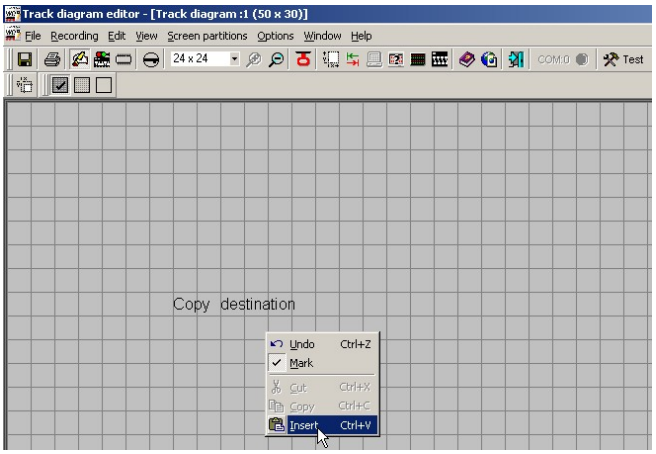


- The pictures show how to select the part of your track diagram, which you intend to cut. This region is surrounded by a frame.

- Open the context menu by pressing the <u>right mouse button</u> and select <Cut>.

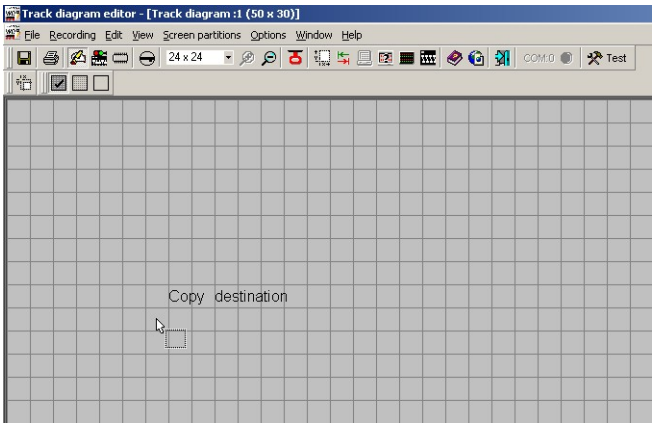
Alternatively you can select the menu command <Process> <Cut>.

- After cutting your track diagram should look like this.

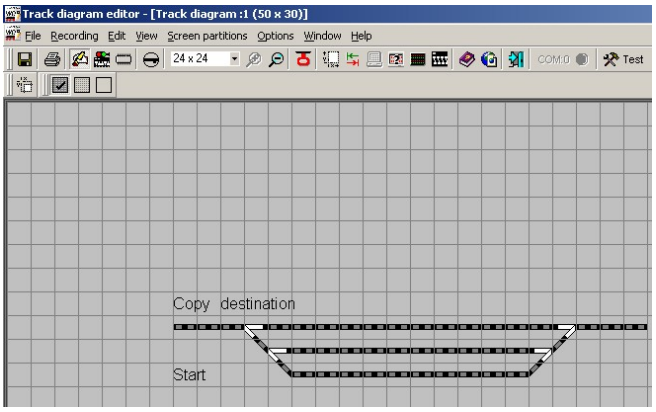


- Now reopen the context menu by pressing the <u>right mouse button</u> and select <Paste>.
  Alternatively you can select the menu command <Process> <Paste>.

- After selecting <Paste> beneath the mouse cursor a small rectangle is displayed. Now move your mouse pointer to point where you want to paste the cut track diagram part.
- At this point insert the cut diagram part by pressing the left mouse button.



- After pasting your track diagram should look like this.
- If you just want to copy a track diagram part instead of cutting it, select <Copy> instead of <Cut>, all other steps are the same.



<u>Important hint!</u>
Don't press any other keys after cutting and before pasting, because the clipboard's content could be lost.

If you don't want to cut or copy any further parts of your track diagram, please uncheck <Process> <Mark>.

19.12 „What's important concerning „STOP"-Commands?"

Concerning commands for stopping locomotives in **WIN-DIGIPET 9.0** you have to pay attention to three aspects.

- „*Immediate-Stop*"/ „*Stop with delay*" in the locomotives database according to **5.3.3**.
- The stop command in profiles (see **10.3.1)** and in timetables (see **11.2.3**) in the form „..|**STOP|18**|..." or also „...|**STOP|5**|...".
- The stop command in profiles and in timetables in the form „..|**00|18**|..." or also „...|**00|4**|...".

The number behind |**STOP**| or |**00**| is always the time delay factor: 1=slowly and 18=fast.

The **first** accepts only concerns routes that are used without profiles or the timetable operation. If you selected in the locomotive database for this locomotive „ *Immediate - Stop*", the locomotive stops immediately at the destination. Otherwise the locomotive decelerates with the entered deceleration rate according to **5.5.2**.

Both other aspects concern all routes controlled by profiles or the timetable. Here you have to distinguish between these following aspects:

- When using the command |**STOP**| at the destination contact of the route the locomotive stops not until the release condition is fulfilled. When using an **AND**-conjunction with a wrong train length, it's possible, that the locomotives drives still behind the destination signal because the second contact from the **AND**-conjunction is still occupied.
- When using the command |**00**| the locomotives always stops, when this contact is occupied. The train stops, but the **route isn't released**, **until** the **release condition** is **fulfilled**.

Using both commands you can enter an individual deceleration rate.

If you want a train to stop during a route controlled by profiles or a timetable e.g. at a building site you can use the command |**STOP**| as well as |**00**| until this contact is not the destination contact of the route.

19.13 „What's important concerning „add-on switches routes?"

Basically you shouldn't register any simple or three-way turnouts as add-on switches (see also **8.8**).

But if you want to register a turnout as add-on switch be careful just to switch turnouts belonging to this route. Otherwise crashes are preassigned.
This concerns also contact events in profiles or the timetable operation.

19.14 „My locomotives have different speeds! What can I do?“

Basically you should enter for all locomotives in the locomotive data base of about **50** to **70**% of the maximum speed.

This is necessary for secure control of your locomotive via routes and the assigned value on the index card „Start/Brake/Destination“ of the routes editor.

Example:
Starting speed of the locomotive from the locomotive database = 50
StartV +/- of the route = -70
Result: 50 minus 70 = **minus** 20, locomotive **doesn't start/stops immediately!**

Only a locomotive with starting speed of 75% or more wouldn't stop in this case.

E.g. select for all locomotives a starting speed of **50** and adjust the minimal and maximal rated speed until the locomotives behave in compliance with your wishes. For this you can also make speed measurements according to **18.13.7**.

If this way doesn't satisfy you, then you have to create profiles for this/these locomotive(s) to adapt the driving behaviour to your routes.

19.15 „How can I load projects from CD?“

If get often projects from friends on CD-ROM for further processing on your PC, you have several possibilities.

We'll describe the easy method first.

Proceed as follows:

- Create a new project called test and answer to the question if you like to transfer the system settings **always** with „No“.
- After starting **WIN-DIGIPET 9.0** you see a blank track diagram and the two locs from the Demo project.
- Now you terminate **WIN-DIGIPET 9.0** and load with the program „Projects“ your original or any other project. This is necessary to transfer your data of the project „Test“ into your project folder in a separate sub folder also called „Test“. This is needed for any further loads of the project „Test“ (see also **3.5.1**).

This project now serves as „Dummy“-project for loading of project data from friends, that you got on CD-ROM or other data media.

The following steps require always a complete project with all data, but with a different project name from „Test“!

If you now want to transfer external projects to your PC proceed as follows:

- Load the project „Test“ following the instructions under **3.4.4**.
- After starting **WIN-DIGIPET 9.0** you see a blank track diagram and the two locs from the Demo project.
- Now terminate **WIN-DIGIPET 9.0.**
- Now restore with the additional program „Data maintenance“ according to **3.5.3** the project from CD-ROM or any other data media.
- Now terminate „Data maintenance“.
- Now restart **WIN-DIGIPET 9.0**.

If you change now to another project, the data of this project are stored in your project folder in a new sub folder with the name of your project.

Your original „Dummy“-project „Test“ isn’t touched by this and can be used for further transfers.

19.16 Collection of questions from the WIN-DIGIPET- Internet - Forum

19.16.1 Digital technique

- **Question:**
  If have my model railroad layout in size N. Which track occupied modules shall I use?
  - **Answer:**
    You should use track occupied modules (Uhlenbrock, LDT or others), these modules send a permanent feedback when a loco stands on the connected rail tracks. You shouldn't use momentary contacts like reed contacts or switching tracks.
- **Question:**
  Is it possible to use momentary contacts (reed/switching tracks) at all?
  - **Answer:**
    It is always better to use permanent contacts, but you use momentary contacts when adding a relay. Then you need two momentary contacts for simulating one permanent contact. The first momentary contact is used to switch the relay ON and the second OFF.
- **Question:**
  My s88 feedback modules cause permanent problems!
  Abnormal feedback messages although there is no train on the connected feedback track.
  - **Answer:**
    Maybe your connection cables with the s88 feedback modules are to long and/or run to near to digital power cables.
  - **Solution:**
    If possible all s88 feedback modules should be settled next to your digital system (Märklin interface, Intellibox etc.) und the cable to your feedback tracks run from this point.
    Also s88 feedback modules with optocopplers could be a solution for your problem.

19.16.2 Intellibox (IB)

- **Question:**
  I get no feedback on screen when I switch solenoid devices manually by keyboard or Intellibox, but it runs in the direction PC > IB!

  - **Answer:**
    This is related to a registered virtual keyboard!
    With a real keyboard you can switch routes via key press!
    Through the feedback from the IB a keyboard can switch routes caused by a key press.

    For this the option „*Display solenoid device position if manual input on keyboard*“ in the system settings – index card„Hardware - IB/ICUM“ has to be checked (see **4.4.1**).

    Therefore the "virtual " keyboard has 2(!) functions:

    - First In the program you can switch a route per click on the "virtual" keyboard
    - AND(!) second from real keyboard if feedback is active!

    Therefore a registered virtual keyboard suppresses with his address solenoid device switching in this address region, because the program checks for a virtual keyboard. If routes are assigned to virtual keyboard these would be switched.
    So it’s better to use a virtual keyboard address, which is unused by solenoids (e.g. 15/16).

  - **Solution:**
    Change the address of the virtual keyboard or kill the file FSKEYB.DAT (= "virtual" keyboard) via Explorer if you don’t want to use virtual keyboards. The file will be automatically recreated if needed again.

- **Question:**
  I have a problem, when connecting a Märklin central 6021 to my Intellibox. When executing basic settings or during automatic operations, when many solenoid devices are switched, the Intellibox blocks.
  I would like to use the 6021 controlling my turnout decoders via I2C Bus?

  - **Answer:**
    This error can be corrected by special values in the special option 931 of the Intellibox
    6021 value = 1
    6020 value = 2
    6027/old Arnold system value = 5
    You can even try all values from 1 to 5.

- **Question:**
  I can not program my Märklin digital turntable with the Intellibox?
  - **Answer:**
    The initialisation phase of the Intellibox last more than 5 seconds, which are intended by Märklin for initialising the program mode.
  - **Solution:**
    Don't switch off all digital power, just interrupt the yellow cable (L) to the turntable decoder. A very elegant way is to use a k84-switching-decoder combined with a k84-symbol in your track diagram for switching the yellow cable for your turntable decoder ON or OFF.
- **Question:**
  I have just connected my new Intellibox. Some locs drive in timetable operation now backwards?
  - **Answer:**
    In most cases this concerns just the Märklin decoders 6080 and 6090, which just capable for the old Märklin-Motorola-Format. You have to synchronize the directions of your locs (arrow up/down in the loco control) one time!
    This is also necessary then adding a loco with such a decoder!
    When terminating the program all loco directions and their functions are stored. When you start the program again synchronize the stored loco directions with the Intellibox by itself
  - **Solution:**
    Open the locomotive data base and check the locomotives for the correct direction and correct the list field DIRECTION if needed. Save and leave **WIN-DIGIPET 9.0**. After the next start of the program all locs should have the correct direction.

  TIP!
  Check by a click on the menu command <INTELLIBOX> <STATUS OF ALL LOCOMOTIVES>, if the Intellibox reports the correct directions!

- **Question:**
  My friend visited me and we tried his locomotive with a Lenz decoder (DCC) on my model railroad layout. Normally I use only Märklin-Motorola decoders. Now the Intellibox seems to slower than before?

  - **Answer:**
    Since Version 1.001-1.001 of the firmware of the Intellibox assume mixed mode operation on your model railroad layout after entering just one DCC-locomotive. Therefore two special options are set to other values. Especially on Märklin-only-layouts delays can be caused by this.

  - **Solution:**
    Correct the special options of the Intellibox as follows:
    25 = 0
    907 = 1

19.16.3 Märklin-Interface

- **Question:**
  After some time operation **WIN-DIGIPET 9.0**: reports "Interface not ready ! Send buffer full!" What's the problem?
  - **Answer:**
    This could be a problem with your serial port card, especially on older PC. The data buffer is not cleared properly!
  - **Solution:**
    Install an additional serial port card in your PC with a FIFO buffer and configure port numbers as COM 3 and COM 4. Afterwards use is **WIN-DIGIPET 9.0** one of the new COM-Ports.
- **Question:**
  My s88 feedback modules react very slowly! When stopping in front of signals my trains often stop behind the stop contact?
  - **Answer:**
    Try to increase the reading interval for your feedback modules as fast as much as possible.
    My beta testers suggest optimal values for the Märklin Interface as follows:
    - Interval for reading feedback modules = **140**
    - Break between commands = **10**
- **Question:**
  Every time I start the program I get the message Error message 9 – Index out of range – No connection to the interface (COM x)!
  Then the program terminates automatically?
  - **Answer:**
    Your COM-port is set to a wrong value. This value can't be corrected by the program any longer, because this value is located in the Windows registry.
  - **Solution:**
  Please contact the hotline
  - **Answer:**
    Open the system settings and the index card „Program settings – CD-ROM/So..“ and check if you entered the proper drive letter. The drive letter has to be entered manually after the installation and every time you create a new project, because this value has to be stored in the windows registry for every project separately.
- **Question:**
  If have got the dinner car (Märklin Nr. 42973) belonging to IC Südwind of Märklin's and every time I press **F3** for the conductors whistle I hear the whistle twice?
  - **Answer:**
    You have to register this wagon as locomotive in your locomotive database and select for function **F3** the toggle function in the locomotive database.
    Alternatively you can register the wagon as special functions decoder for one locomotive. In this case the wagon is fix associated with this loco and can't be easily exchanged with other locs.

19.16.7 Routes editor

- **Question:**
  Under releases in the routes editor I have...
  - Selected „*Only signals*“ under the point **Locked are:**
  - and in the system setting I checked „*Locking solenoid devices in active routes via mouse click*“.

  Nevertheless I can’t switch turnouts in active routes via mouse click?
  - **Answer:**
    The setting in the system settings locks generally all solenoid devices in active routes via mouse click. This independent from the settings in the routes editor.
    The point „Locked are:“ is used for checking routes in automatic operation, so that rivalling routes can’t be switched!
- **Question:**
  What’s the difference between the different possibilities under **Locked are:?**
  - **Answer:**
    If you select **Turnouts only**, in block system operation following train can start earlier, because the signals aren’t locked. See also the example under **12.16.1.**
    If you selected just **Signals only**, two routes **crossing** at one turnout could be switched **parallel**.
    As a rule you should select for security reasons **All solenoid devices**.
- **Question:**
  Why shall I register the track symbols in proper sequence from start to destination when recording a route?
  - **Answer:**
    This important for a proper operation of the simulation. In simulation mode the contact are automatically activated in the registered sequence. This is very important, otherwise the simulation will cause errors.
- **Question:**
  Do I have to modify my routes after changing my track diagram?
  - **Answer:**
    You have to check your already registered routes **in every case** by clicking on the symbol in the toolbar of the routes editor (see **8.14**) and correct them if needed.

19.16.8 Timetable editor

- Question:
  Can I realize a commuter-train control in time table operation?
  - **Answer:**
    A simple commuter-train control can be registered with three time table lines:
    1. Create a new table e.g. "Commuter.FPL"
    2. You register 2 routes from A to B and one from B to A with all conditions etc.
    3. You enter a small timetable:
       - 00:01 LocoX - Route A to B
         K1 start – K4 braking – K5 Stop AND! K5 Change direction
       - 00:04 LocoX - Route B to A
         K5 start – K2 braking - K1 Stop and K1 again Change direction.
       - In the third row of your timetable you append the name of this timetable again
       - 00:05 ===> Commuter.FPL

    By this every time the timetable ends it restarts itself in the first row.
- **Question:**
  When testing a single timetable line the clock starts, but stops before reaching the destination contact?
  - **Answer:**
    You used the AND/OR – Condition in the routes editor, but entered the destination contact in the bottom field (under AND/OR).
    The proper destination contact has to be always first registered in the top field.
- **Question:**
  Can I enter alternatives in timetable operation?
  e.g. go to line z if route x is blocked?
  - **Answer:**
    No, this is not possible, because the timetable operation was meant be as simple as possible.

19.16.9 Profile editor

- **Question:**
  What mean the abbreviations after the solenoid device command |**MAG**| ?
  - **Answer:**
    These abbreviations |**MAG**| mean:

Abbrevations for solenoid device	
W	Turnout
D	Three-way turnout
S	2-aspect signal
M	3-aspect signal
L	4-aspect signal
v	2-aspect distant-signal
V	3-aspect distant-signal
X	Turntable/Transfer table
G	Disabling signal

Abbrevations for solenoid device	
S	2-aspect semaphore signal
M	3-aspect semaphore signal
S	2-aspect semaphore distant signal
M	3-aspect semaphore distant signal
G	k84-switch
P	k83-push-button
P	extended k83-push-button
S	extended k84-switch

The abbreviations above are also used in the timetable editor

- **Question:**
  I have created a longer profile for a long route for a locomotive. Can I transfer this profile to another locomotive.?

  - **Answer:**
    Create for the other locomotive also a profile for this route. No load the contact events for the first locomotive, press the right mouse button over these events and copy these events and paste the events by the same way to the new locomotive (see also **10.3.7**).

19.16.10 Data saving

- **Question:**
  How can I transfer my track diagram to another computer using the same version of WIN-DIGIPET?
  - **Answer:**
    The file GBILD.DAT contains all track diagram data and is one of the most important files! You have to copy this file! For best results use the program „Data maintenance"!
- **Question:**
  I burned my **WIN-DIGIPET 9.0** data on a CD for saving reasons. After a computer-crash I copied the data back. When I start the program I get many error messages (e. g. „Access denied")! What happened?
  - **Answer:**
    When burning data to a CD-Rom all files are automatically marked as „Write protected".
    When copying back these files to your WIN-DIGIPET folder, WIN-DIGIPET can't write any further data to these files.
  - **Solution:**
    Select in the Windows Explorer the complete content of the WIN-DIGIPET folder. Click with the right mouse button at this selection and then select <Properties>. Uncheck „Write protect"!
    For faster results use the program „Data maintenance"(see **3.5.3** and **19.15)**.

20 – ADDITIONS AND SUPPLEMENTS

This manual is extended at given time and/or is complemented, as far as advancements **of WIN-DIGIPET 9.0** should require this.

Such additions and supplements are published, without appointment in this manual, as an attachment to this manual.

On the CD you can find a Demo project.

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