

*International Edition*

Free,  
electronic magazine  
for railroad enthusiasts  
in the scale 1:220  
and Prototype

# Trainini

German Magazine for Z Gauge

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**Wild growth on the railway embankment**

**Introduction to digital practice**  
**First impression of the Märklinium**

## Introduction

Dear Readers,

how quickly time flies by, I realize again when I write these lines. A few days and weeks ago we were still busy with a two-month heat wave, which certainly took away the desire of many to handicraft.

I also preferred to spend time outdoors, but at the same time I used the time to collect new impressions of handicraft material and to take photos for suggestions.



**Holger Späing**  
Editor-in-chief

After all, the handicrafts season is just around the corner and the weeks until Christmas will certainly fly by again. First results, which can emerge from fresh inspirations, we present to you today.

The French company Microrama has already impressed us several times at trade fairs. Small dioramas are created at their stand, where the vegetation just sprouts up into the air and provides unique impressions.

This has also challenged us to work with this material and try out how far it is suitable for our purposes on a scale of 1:220. The enthusiasm about the results followed on our feet. We are also pleased that the owner is also showing great interest in serving the small tracks with suitable material.

Today they can admire our results, because we have redesigned a railway embankment with Microrama products.

Many readers have also been waiting for the continuation of the digital series, which is also the reason for the late publication of this issue. We received numerous replies with questions about the continuation. We would like to thank you for this and are glad to be able to satisfy your thirst for knowledge today.

Of course, other parts are already in the planning and preparation stage. Digital model railway technology provides also a lot in gauge Z and we are persistently approached with questions that we try to answer. It is possible that we will have to take this topic with us into next year - your reactions have simply overwhelmed and surprised us!

We also take a look at Göppingen. There, the Sieber family invests millions of Euros to give Märklin a modern and appropriate factory museum. We are grateful and happy for this.

On the occasion of the open day, the customers and friends of the company had the opportunity to get to know the first construction phase and to get an impression of how the Märklineum will be structured. We were there and report for all those who did not find their way to Swabia.

But the diversity of this issue is by no means exhausted! I hope you enjoy reading and discovering it.

Yours,

Holger Späing

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Currently no items

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### Cover photo:

The term "hedge cable train" takes on a completely new meaning when 220 012-9 with its express train passes the railway embankment lined with sprawling blackberries and beautiful hedge roses. Such impressions become possible with the Microrama material, which we will present in this issue.

Modelling vegetation with Microrama

## A new lease on life for a railway embankment

*The French supplier Microrama increasingly has been making a name for itself at the International Toy Fair and various consumer exhibitions. With its proprietary products and new techniques, it has virtually reinvented the process of applying electrostatic grass. Today we want to test if and how the Microrama approach can produce a successful result at scale Z as well.*

In the April issue, our reader Jochen Brüggemann already had reported on how he was inspired by trade fair demonstrations in which Gwendal Theis from France has been advertising his Microrama products. Having experimented with applying multiple layers of static grass, Jochen himself had already sought ways to model smaller shrubs, such as those found on railway embankments, by "stacking" grass fibres.

In his article, he presented his results on modelling brooms and corymb roses on a small diorama of a railway embankment with three tracks, of which he had built three similar versions over the years.



The new railway embankment vegetation has a convincing effect, with the express steam locomotive of the 01 series coming to a standstill with its express train. In this article, we explain how it is created.

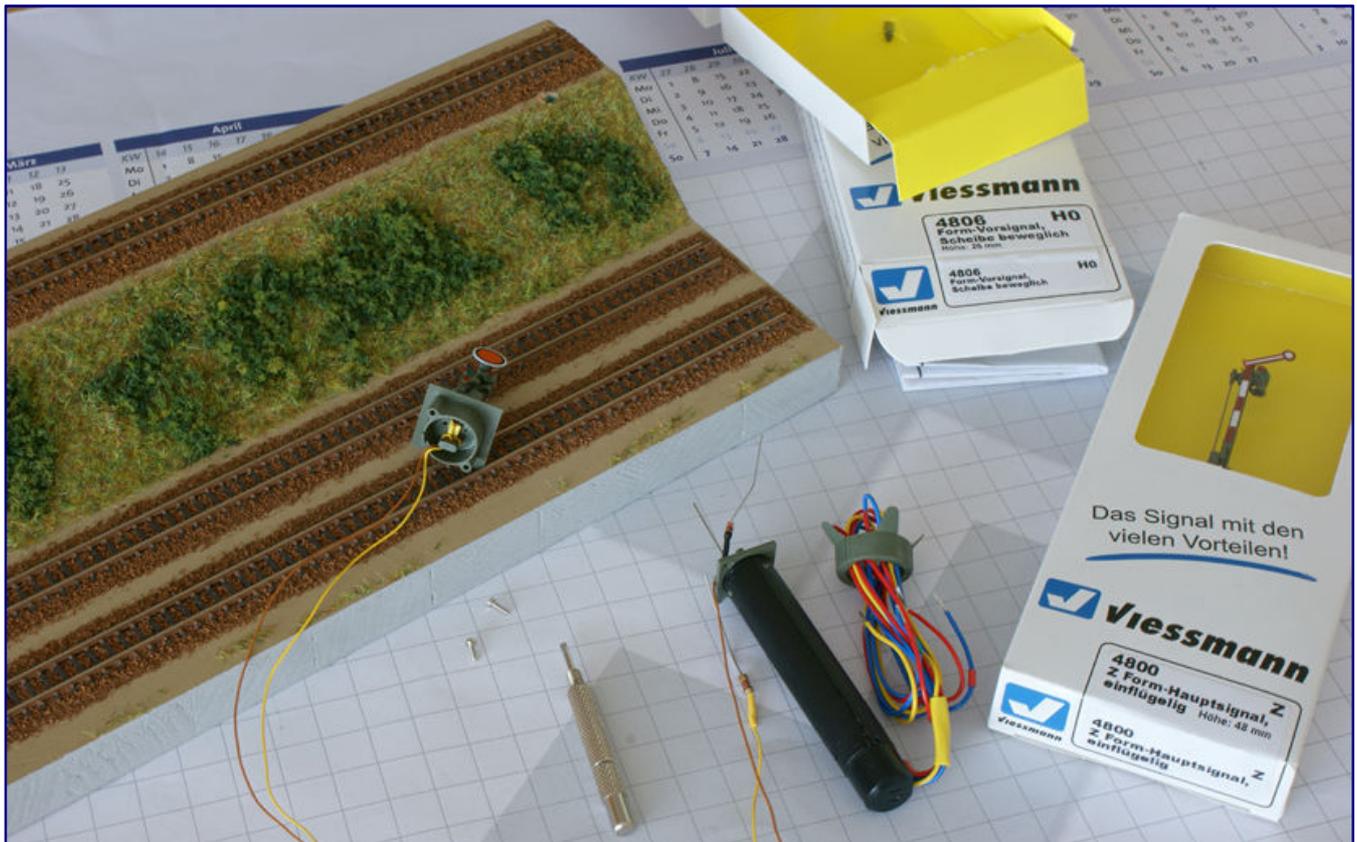
As the oldest version of his embankment dioramas was in need of an overhaul and new greenery, we had the idea to refurbish it with products from the Magigras range. This gives our readers the opportunity to compare two showpieces of the same basic design, but modelled with different techniques and products.

The editorial team also wondered whether the extremely impressive results presented at trade fairs could be transferred to a scale of 1:220 in terms of techniques and growth height. This was the beginning of an exciting experiment, which we would like to share with you today.

## First step: installing new signals

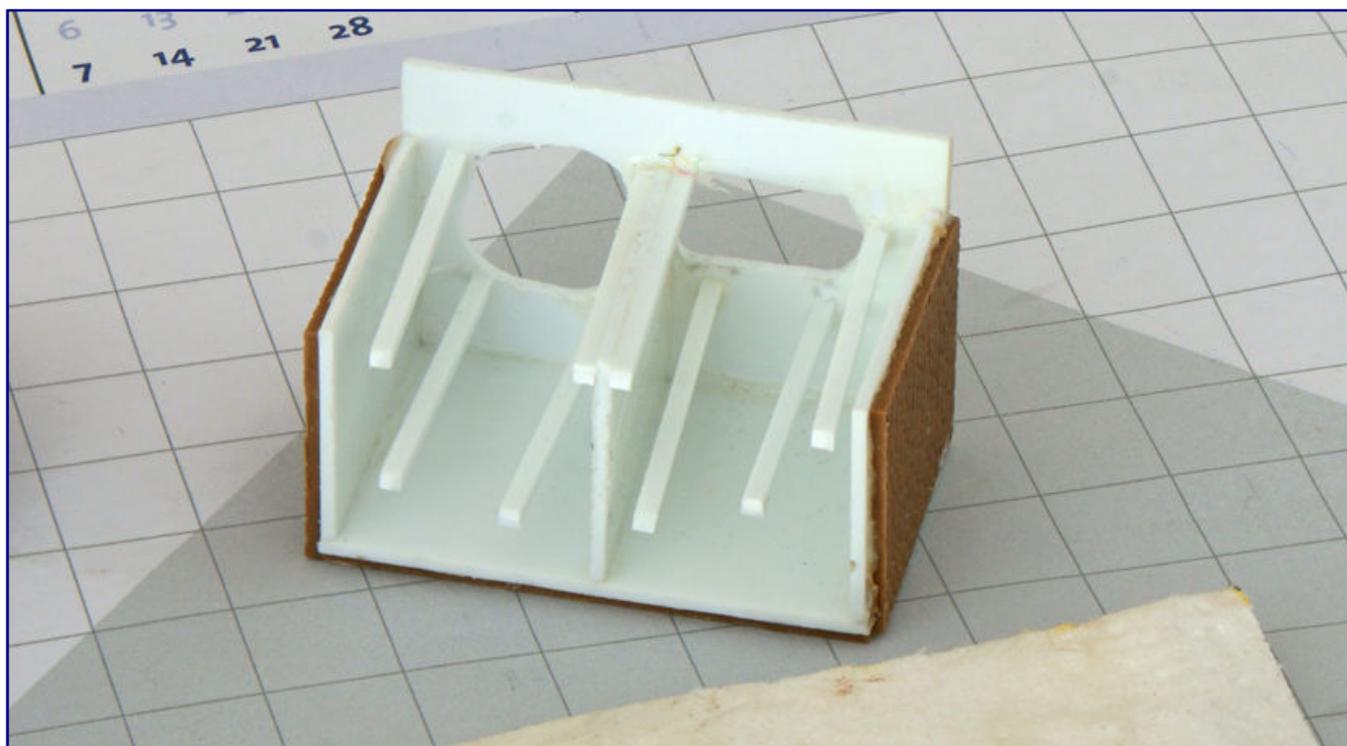
Our trial diorama originally carried two semaphores – a distance signal and a main signal – next to the track on top of the embankment. Once produced by the manufacturer Schmidt, these fine scale brass signals have not been available for many years. Jochen Brüggemann therefore moved them to the newer version of the diorama.

Two holes on the old diorama indicated their previous location and made us think that installing new ones would create a nice focal point on the right hand side of the diorama.



Since the installation height on the small diorama was not sufficient, the signals had to be separated from their drives. With the announcing signal, this was achieved simply by loosening two screws. On this photo one can still see the old vegetation, which showed gaps and weaknesses upon closer inspection.

As the original signals are no longer available, we decided to use only products which can be easily sourced today. The supplier of the current Märklin signals is the accessories manufacturer Viessmann. Their product range includes the semaphores which are essential for our project: main signals as well as suitable distance signals.



The outside of the large signal base consists of Kibri's irregular wall plate (Art. No. 36912), from which three matching pieces were cut with a circular saw (top). The interior is made of a white 2mm Evergreen polystyrene sheet (bottom). Additional support is provided by square polystyrene profiles.

Although the Z-gauge signals from Viessmann are actually shortened N-gauge models, the difference in size is hardly noticeable as long as there is no exact scale reference piece in the vicinity. Many well-known and popular Z-gauge layouts, including "Sägethal" by Götz Guddas, bear witness to this.



The corners of the signal base still required some additional work. The stone structure of the slabs had to be carved with a craft knife on the glued edges. Any remaining joints were filled with plastic putty and sanded before painting.

And so we used the single-bladed main signal (art. no. 4800) and a matching distance signal (4806) with movable disk.

Both signals have two concepts and can display the combinations Hp 0 / Hp 1 (stop / drive) or Vr 0 / Vr 1 (expect stop / expect drive). They are typically placed as block signals outside stations.

Having decided on the types of signals we wanted to use, we now tested how to best place the signals on the diorama and to see how the large base of the distance signal would fit into the available space.

This allowed us to determine the suitable distance to the track and the dimensions of the brick base which prevents the signals from sliding off the embankment.

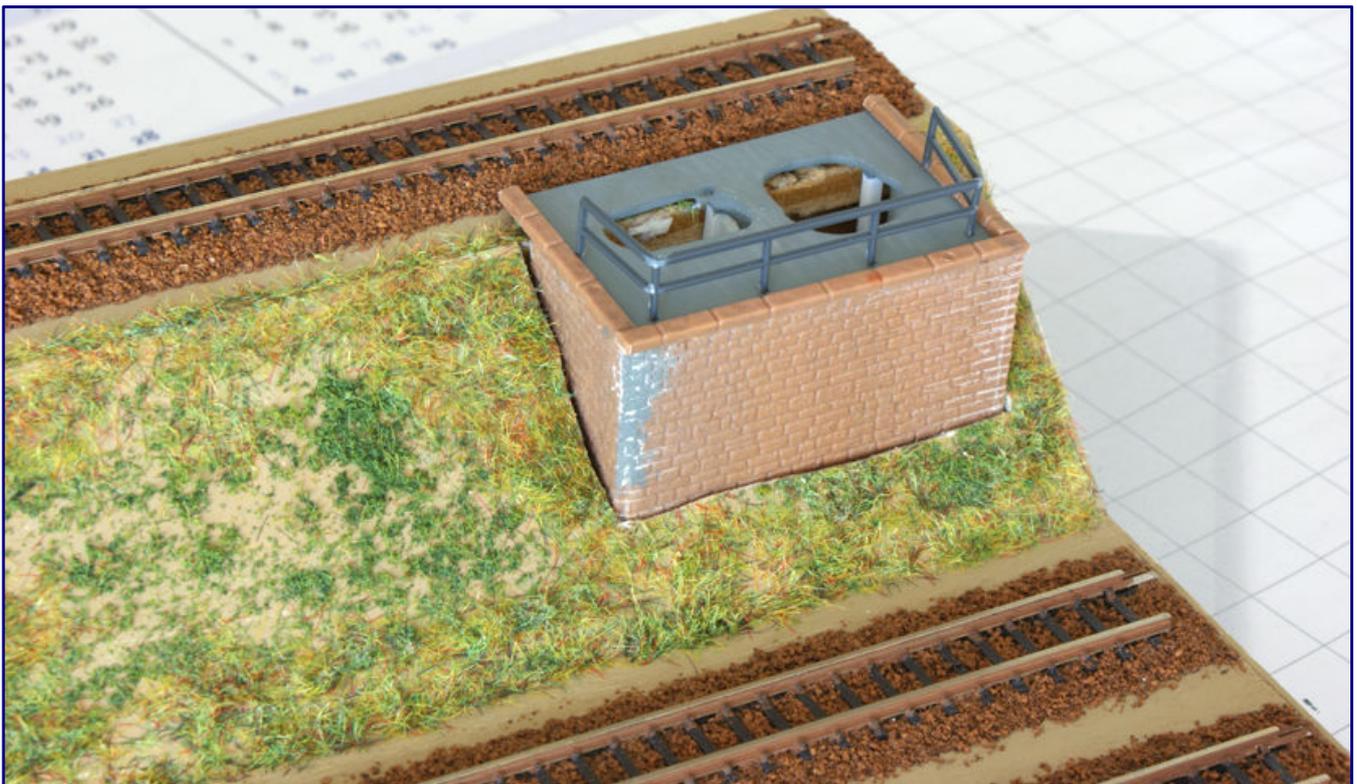
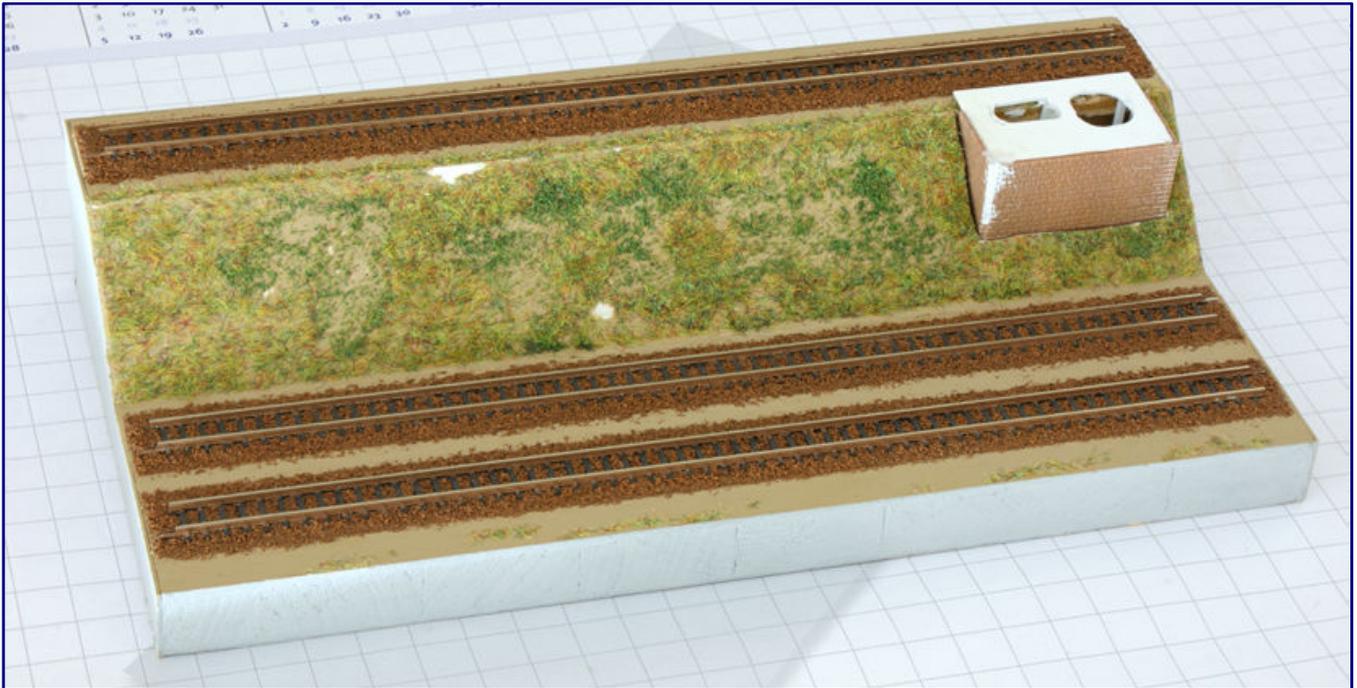
However, it became clear that there would not be sufficient space for the signal drives, which protrude about 65 mm downwards. Many model railroaders know this problem from building their own layout. So in this case the drives had to give way, but the signals should not lose their functionality and lighting.

Modifying the drive of the distance signal was still very easy: Only two small screws had to be loosened, so that the drive could be pulled off. The cables to the LEDs were left in place and we replaced the missing adjusting rod with a suitable spring steel wire. This would easily allow for a conversion to a modern servo drive.

However, the main signal proved to be more stubborn. The drive was firmly connected to the signal and the cable for the LEDs ran through the enclosed drive mechanism. We had to open it carefully, in order to be able to look inside.

Removing the drive required considerable force and care at the same time, in order to not damage the signal. Any problems with the mechanics and we would face a real test of patience in reassembling them!

Here, too, the adjusting rod was later replaced by a spring steel wire, which disappeared in the base, but was not connected to an external drive. The wiring of the lights was more tricky: first, we had to cut through the black wires leading from the bottom of the mast to the drive. The same had to be done with the yellow and brown cables at the lower end of the drive which would lead to the transformer.



In the meantime, the base was placed into the diorama (top) and the old greenery was largely removed. Then the cover stones were glued on (bottom) and the base plate was painted concrete grey. The areas where the putty was applied were also painted grey for better contrast and for controlling if the carved edges needed some additional work. Also the railing had to be attached.

After determining the correct polarity due to the resistor and diode, the ends were soldered together to obtain a sufficiently long power supply in the "underworld" of the diorama. In order to prevent the risk short circuits later on, we insulated the connections with pieces of shrink tubing (Conrad Electronic) that had already been pushed onto the thin wire before soldering.

Thus prepared, the two semaphores were carefully set aside during the construction of their base. With a sharp craft knife we cut a rectangular space into the cardboard support of the railway embankment.

The dimensions (length and width) were determined by our previous tests for finding the right position of the signals. The height of the entire signal base was determined by measuring the distance between the base board of the diorama and the base of the track. The inside structure of the signal base and the horizontal surface panel were constructed from 2mm Evergreen polystyrene sheets.

The thickness of the outer cladding had to be taken into account for the overall outer dimensions of the signal base. For the outside of the signal base we used an irregular wall plate from Kibri (36912), which was cut to size with a circular saw and glued to the body with Uhu Plast Special.



Several coats of paint were applied in order to achieve a natural looking brick wall. A first coat of dark brown paint was applied for the joints, followed by a lighter coat in dry brush technique, which emphasizes the stone structures. We chose paints from the the Tamiya range which are optimized for plastic surfaces.

With this, the body of the base was already quite stable. However, we wanted to make it even more sturdy, given that we would have to later insert and push the signals from above into the base, without the floor giving away too much or even breaking.

We therefore added to the base an inner supporting wall and several pillars cut from square Evergreen polystyrene profiles, sold by Faller. The concrete slab visible at the top was painted in grey (Revell 47 matt).

After drying, we filled the joints in the outer cladding with Revell Plasto (model putty for plastics), sanded the edges and carved the stone structures into the visible edges. The cover stones which come with the Kibri plastic brick sheets were cut to length and glued to the top of the wall Uhu Plast Special. The rest of the signal base was now ready for further colouring.

In order to prevent any plastic shine, the brick walls received a base coat of Tamiya acrylic lacquer XF-64 (red-brown matt). Once dry, the brick surfaces were dry brushed with a lighter colour consisting of a mix of XF-52 (earth matt) and XF-2 (white matt). The already painted concrete slab was protected with Tamiya masking tape, which proved to be the best of its kind in our projects.



Before proceeding to the greening of the diorama, a new layer of sand was applied in between and on either side of the tracks. We used very fine rust-brown sand from the Minitec range, which hardly shows any red tones in this finely ground state.

Because of the height of the signal base, real life safety regulations would require the installation of a railing for protecting railway workers from falling off. We therefore took a suitable railing from the Plastruct product range. After cutting to length, bending the corners and drilling holes to accommodate the supports, it was given a silk matt finish in RAL 6011 Reseda green from Oesling Modellbau.

Slowly but surely, we were now approaching the main part of this project: the re-landscaping of the diorama. Yet, some additional preparation was still necessary. In particular, as much as possible of the old ground cover had to be removed, essentially by scrapping it off with a small spatula and sand paper.

We also drilled two 12mm holes into the diorama baseboard and connected them with a jigsaw, thus creating a long opening for the cables from the signals. The missing sand edges next to the ballast bed were created by scattering rust-brown sand from Minitec (51-1211-01) over a layer of UHU wood glue (UHU) which we had evenly applied with a brush.

The space between the lower two tracks received some typical sparse vegetation with the help of some pieces cut from grass strips from Busch ("Sommer" 1343). At the end of these preparations, the signal base was inserted into the opening and attached to the diorama base with UHU power glue.



The areas left and right of the tracks have now received a prototypical-looking layer of sand. In addition, some pieces of grass were cut from „Summer“ grass strips from Busch and glued into place between the tracks with UHU Power glue.

## Creating the new landscape

Now the moment had come for letting nature reclaim its terrain on the diorama. Grasses, blackberry bushes (with still immature fruits) and corymb roses with pale pink flowers are often found on railway embankments and served as a model for this project.

Working with Magigras, the product's name, is based on the principle of applying a layer of an electrically conductive or ionising base made of a cement-synthetic resin mixture, which is mixed from a powdery and a liquid component at a ratio of 1:1.

For a diorama of this manageable size, preparing 50 grams of resin putty were more than sufficient, and even left some extra material for use in another showpiece. It is important to evenly mix the resin in a mixing bowl and to eliminate immediately any lumps of powder whilst mixing.

The application time was completely sufficient for the ten-minute filling operation. The paste was evenly applied with a spatula to all the surfaces that were to be planted. The manufacturer assures that it will hold on to almost all types of surface material and we can confirm this from our own experience with the material.



Both components for the electrically conductive base putty are mixed at a ratio of 1:1 (top). The resulting resin is then applied with a spatula to all those areas of the diorama which are to receive static grass (bottom). The colour of the putty slightly changes when drying.

This step was followed by a curing time of 16 to 25 hours. In any case, the curing time depends on the thickness of the layer, but also on the room temperature. As the paste hardens to a firm but still flexible layer, its shade changes from black to dark green.



The vegetation for this project was exclusively modelled with Magigras products from Microrama. This included brown and green Magifloc fibres of different lengths and shades, MAGispray adhesive spray and Magiflor flower flock.

The respective colour is therefore an indication for when to proceed with the work. We then had to mask all tracks, the sandy spaces in between and the signal base in order to protect them from adhesive spray. We used standard masking tape and protected the two signals by putting a freezer bag over it and taping it to the edges of the base.

From now on, the steps of applying spray adhesive and static grass fibres were repeated in constant alternation. Achieving good results does require, however, the right technique for applying the static grass. That is why we paid very close attention to Mr. Theis' trade fair demonstrations and listened carefully to his explanations.

The grass fibres were applied with the help of a static grass applicator. The voltage of the device depends on the length of the fibres to be used, with longer fibres requiring a higher voltage than shorter ones. While Gwendal Theis works with a "RTS Greenkeeper", we used our Noch-Grasmaster 2.0 (Art.-No. 60135).

According to manufacturer specifications the device has a nominal voltage of 20 kV - generated from a 9-volt block battery. With the rather short fibres which we use normally in modelling Z-gauge layouts, we would assume that even a first generation Grasmaster (15 kV) should be sufficient.

The process of applying the static grass began with an even application of Magispray. This was then repeated in each time before a new layer of fibres were applied. Before applying the static grass on should not forget to One should not forget to attach the clamo of the counterpole to a needle inserted into the conductive base layer.



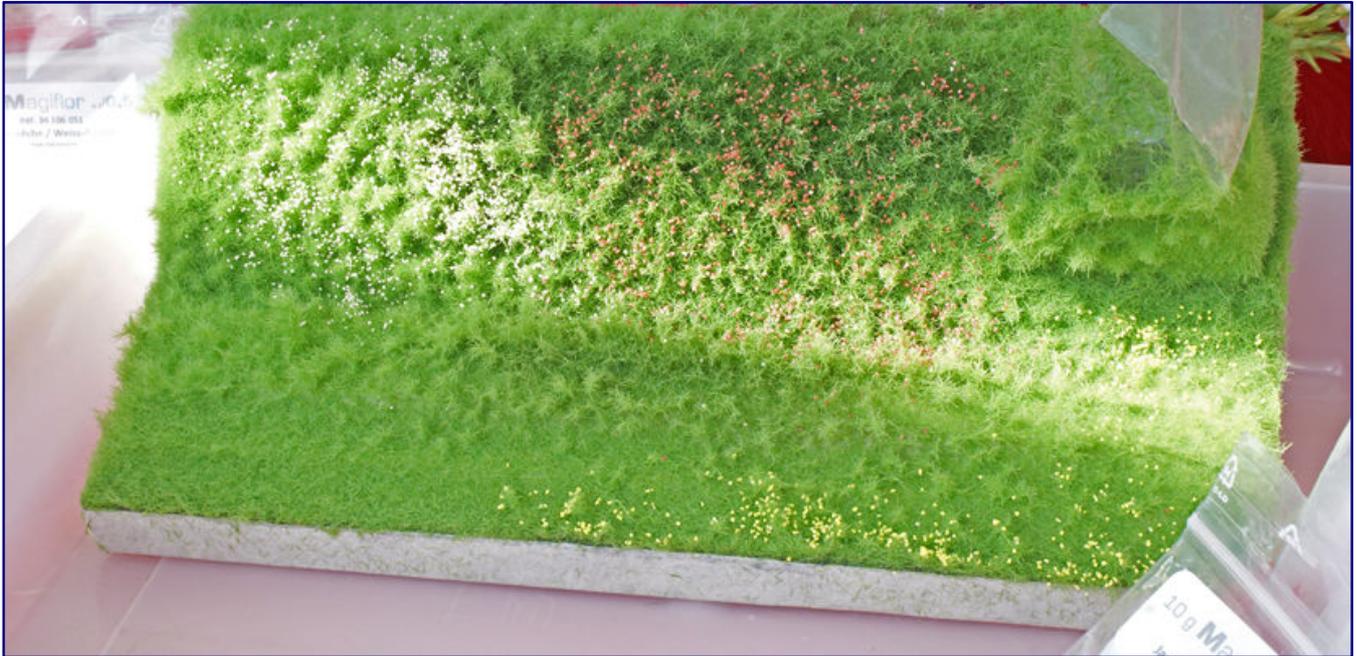
The Magigras technique in four steps: The target surface is sprayed with Magispray adhesive (photo 1), whilst all other areas are masked with tape or sheets. The Grasmaster static grass applicator is now moved horizontally towards the sprayed area (photo 2) in order to build up the undergrowth of the bushes. This first layer does not cover yet the underlying surface (photo 3). Several additional layers of increasingly shorter fibres are applied on top of each other until one achieves a bushy looking effect (photo 4) in which the brown fibres appear like branches.

Since we first wanted to concentrate on the higher bushes on the railway embankment, we did not spray the entire embankment, but sprayed the glue first on the middle area in front of the signal base.

Using the Magispray adhesive glue does not allow to create exact delimitations between different zones of vegetation, but this is also not the intention as nature does not know sharp transitions, except, of course, in areas cultivated by humans, such as in gardens.

After applying a first layer of adhesive spray we aimed at creating blackberry bushes. We modelled their branches with 4.5 mm Magifloc fibres "Milk Coffee" (32 172 404). At the beginning of the process it is important that the fibres are not shot from top to bottom with the aid of gravity, but to only rely on electrostatic forces.

This meant that our diorama had to be held vertically so that we could approach it from the side with the Grasmaster. The electrostatically loaded fibres were thus pulled into the conductive base layer all by themselves and attached themselves immediately to the adhesive glue. This technique makes for a grass cover which is less dense than otherwise, but with grass fibres that are perfectly aligned for the next steps.



After several layers of static grass, the diorama had completely disappeared under a carpet of green grass and wild nature. The realism achieved with the Microrama products was impressive and unprecedented. The challenge at this stage was to peel off the masking tape without destroying what had been created.

Holding a small diorama in a vertical position is certainly easier than doing so with an entire layout. Nevertheless, one should try to set it upright for the greatest possible success. In addition, a lot of fibres will fall off in the process and can be reused without hesitation as long as they are collected afterwards. If you work a basement with a clean tiled floor you could just sweep them up. In our case we used a plastic bowl "Elita 51021" from Conrad Electronic.

After this first layer of static grass we applied further layers with the same type of fibre, gradually building up the branches of the bushes. For a better result it helps inspect the results after each step and change the direction of the grass application. This process can be repeated at will until the bushes have reached the desired height. In our case, one or two subsequent passes were sufficient for a credible looking embankment.

Note that it is preferable to use shorter fibres when adding additional layers. The sequence from long to short fibres must always be followed. This concerns both the process for building up ground cover and the flocking of the new Microrama resin trees.

On a scale of 1:220, the choice of fiber lengths is of course limited, but this had no influence on the results, as we were pleased to discover. It also helps to change the color when using a fibre with a different length.

The dark leaves of our blackberry bushes were modelled with 2 mm Magifloc "Olivegreen" (32 153 302), which looked very harmonious in combination with the very light brown of the branches. And it was probably good to not having chosen darker fibres for the undergrowth, as it is largely in the shade anyway and will not look as bright when the bushes are finished, compared to the initial stages of the work.

Building the leave cover of the blackberry bushes was also done in several steps until we had achieved the desired result. The wider vicinity of the the blackberry bushes as well as the narrow stripes at the edge of the tracks were covered with spring green fibres (2 mm; 32 121 302). In some cases, we applied only one layer (wild grasses), in others, several layers were stacked on top of each other according to the procedure described above (corymb roses).



**Hard luck! Large parts of the static grass got stuck to the masking tape and became detached from the diorama when peeling of the the tape. The resin base cover is visible again and had to be covered up once more. We used grass glue from Noch which can be applied in a more precise fashion than the Magigras adhesive spray.**

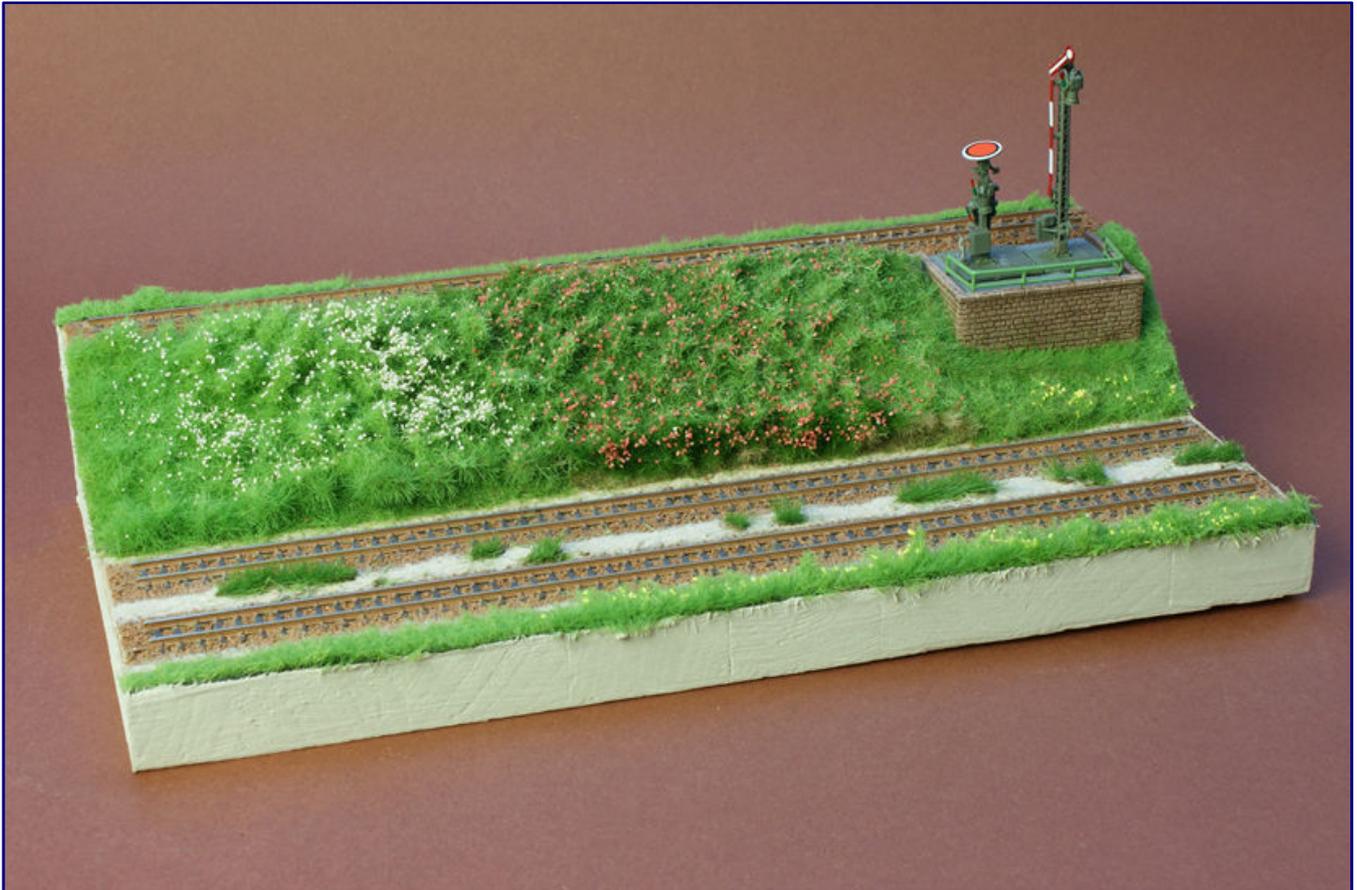
After completing the greenery, we added flowers and berries: yellow summer flowers in the grassy areas, pale pink flowers for the corymb roses and red, immature blackberries that stand out from the dark green.

They were reproduced using Magiflor with a grain size of 0.5 mm, which was scattered by hand in a quick movement upon the desired areas after having applied a thin layer of adhesive spray. It is best to do this in a random way, in order to avoid an overly even and orderly look. Nature, after all, is usually rather chaotic and arbitrary.

In terms of colours, we used Magiflor purple red (34 130 051), tyrian pink (34 108 051) and lemon yellow (34 111 051). Mr. Theis announced to our editorial team that even finer Magiflor 0.25 mm grain sizes especially for Z-gauge should become available soon.

An unexpected problem arose at the end of the process. When peeling of the masking tape, the grassy areas next to the tracks got detached from the diorama and came entirely off. Our advice is therefore to mask with paper sheets or cardboard stencils wherever possible. This, however, requires the help of an additional person.

In some areas of the embankment, several bushes had also slightly detached. As the bushes had not yet completely dried, we were able to slightly reshape and push them back into position with tweezers. Any remaining gaps were covered with grass glue from Noch and received a layer of Magigras.



The finished embankment diorama in all its splendour and with a thoroughly convincing new greenery. The Magiflor flowers add to the realism.

For these final touches and repairs, we used olive green (32 153 404) and spring green (32 121 404) fibres, also in 4.5 and 4 mm lengths, respectively. The blackberry bushes were improved in some places with several layers of with Magifloc "Milk Coffee" (2 mm; 32 172 302). The result looks convincing and varied, as can easily be seen on the photos.

## Conclusions

Even on a scale of 1:220, excellent and very convincing results can be achieved with Magigras. It does not require a change of basic modelling methods, only the fibre lengths should be carefully selected and used.

Some care should also be taken as to the number of static grass layers one wants to use. The Microrama products allow one to create plants of enormous and luxuriant heights, but they should remain credible in any case. As so often, it is a matter of doing more with less!

Correctly used and applied, the material yields extremely realistic results, also because it allows for the creation of a certain visual lightness to the resulting plant structures. It helps to prevent a monotonous look to the vegetation and allows everyone to achieve lasting success in a fast and simple fashion.

Before getting down to work, however, it makes sense to familiarise yourself with the techniques and materials. Small Styrofoam test strips, such as those used by the manufacturer for demonstrations at trade fairs, are particularly suitable for learning and applying the correct technique.



**This final photo of a V 32 class locomotive towing a passenger train provides a good illustration of how the transition between the vegetation and the track has turned out. The blackberry bushes have been deliberately pushed back a bit against the embankment in order to provide sufficient space for the trains. At the same time, twigs and branches have been left more visible in this area. In sum, Magigras produces a truly unique natural effect, even at the smallest scale!**

On the pages of the German sales partner, demonstration videos are linked with spoken explanations, which make it easy to follow and internalise the technique. A vertical instead of a horizontal application during the first steps in the process is an essential factor for good results.

Before working on an entire layout, one should think in advance how to best implement the Microrama technique. In addition to the vertical positioning of the system or segments, it is also possible to prepare diorama-like inserts, because Magigras can undoubtedly be processed more easily on small segments, as the mist of the adhesive spray must remain controllable.

We were pleased to see that it is quite possible to combine "vertical technique" approach with the classic grass and glue method. And we hope that our mishap will leave readers inspired to follow our suggestion to use model individual sections which can then be attached to the scenery in a traditional fashion.

In any case, Microrama has taken a top position as a producer of realistic scenery design products and has proven that its approach is also well suited for Z gauge projects. We also expressly welcome the supplier's announcement to develop and offer even finer material for the small scales.

**Supplier information on the next page.**



**Manufacturer pages and German sales partner:**

<https://www.microrama.eu>  
<https://modellbahn-schildhauer.de/besonderes/microrama/>

**Tool and accessory suppliers from this article:**

<https://www.conrad.de>  
<https://www.noch.de>  
<http://www.oesling-modellbau.com>  
<https://www.uhu.de>  
<https://www.revell.de>  
<http://www.sceneryproducts.de>  
<https://www.tamiya.de/>  
<https://viessmann-modell.com>

An idyllic summer scene in the 1950s: The „Blaue Enzian“ express train meets the last remaining example of a Kittel-class steam railcar which had still made it into the fleet of the German Federal Railway.

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## Digital model railway control (part 4) Introduction to digital practice

*After the three quite theoretical parts, we now want to go “in medias res”, i.e. “in the middle of things”. We will build a test circle or a small test facility with which we can clearly demonstrate all aspects of digitalization. At the beginning we limit ourselves to the planning and the installation of the absolutely necessary digital components as well as their cabling. In the next part we will equip a locomotive with a decoder and put it into operation together with the system.*

By Andreas Hagendorf. Word should have got around in the meantime: Careful planning is already half of the layout construction. Space available, the theme of the layout, travel options, existing or rolling stock that is planned for future purchase, budget, expansion plans, personal skills and much more must be incorporated into the plan in this phase.

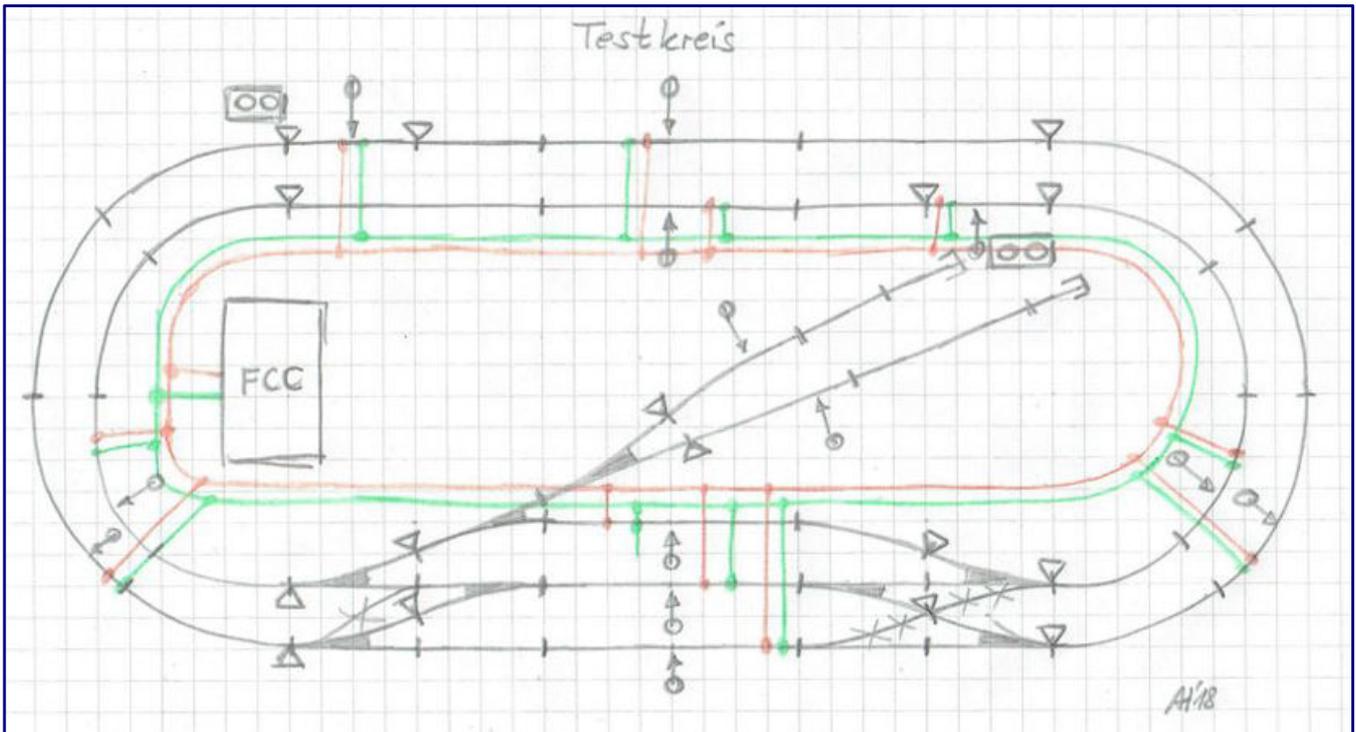


Today we want to approach the dream of a digital layout, like “Drachenstein” by Harald Hieber, by planning a test layout.

In the evening, sitting comfortably on the sofa in front of the fireplace with a good glass of wine, browsing through the relevant literature or surfing for well-made websites, brings the first ideas and thoughts. After all, we can let trains run in our minds and on paper, manoeuvre goods and prepare steam locomotives for their next use on the layout.

This results in a lot almost by itself. There should be a turnout here, there must be a signal there, and the cable bundle may also need space in that corner. At the next meeting or regulars' table, the experts can take a look and make their comments, criticise and make suggestions for improvement.

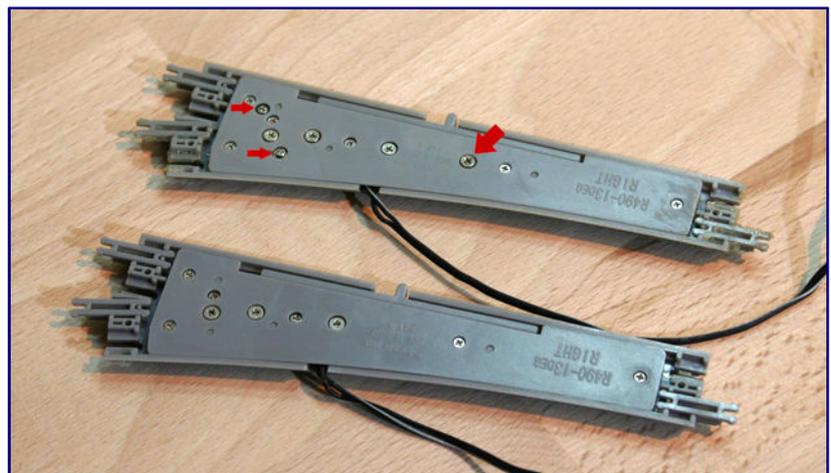
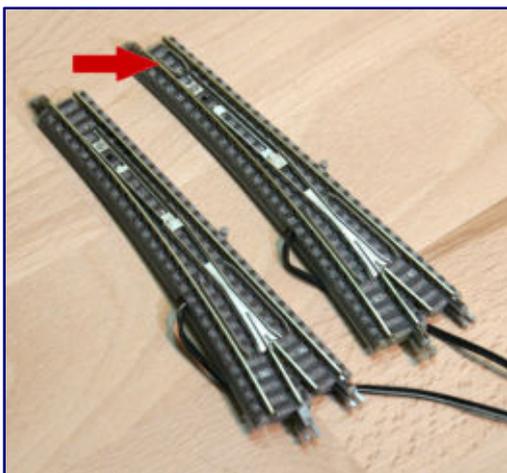
That's how we want to start today. In the picture we show the paper pencil sketch of our test system. A double-track oval with transition points at the lower edge of the picture. There is also an alternative track for the inner line (perhaps also for a station?), from which a small staging area branches off on the left side.



A first pencil drawing shows our planned test oval including the ring line with the planned feed points for the digital voltage.

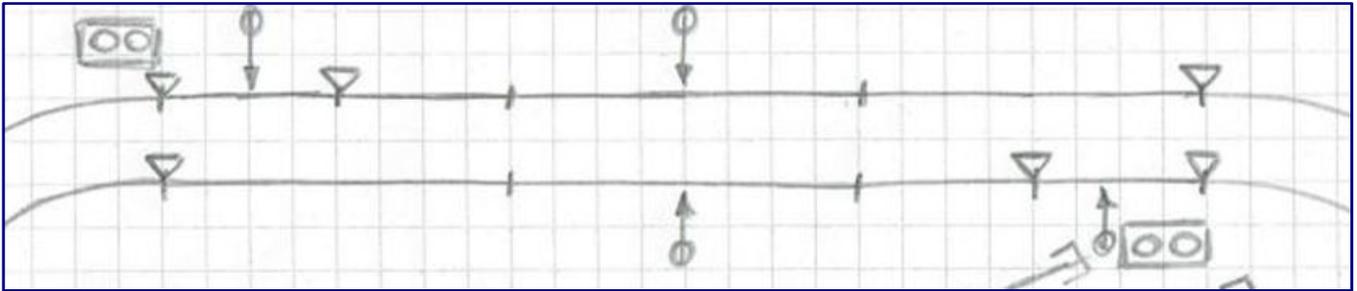
Not to be seen here is that the track material will be mixed from Rokuhan and Märklin tracks. All turnouts are driven and planned for future digital operation. Newer Rokuhan turnouts have a switch to deactivate digital control.

These new turnouts are recognizable from above by additional wheel arms in the entry area and from below by two additional, small contact screws. In addition there is an additional, larger retaining screw (see arrows in the pictures).



For digital operation, the stop switch function should be deactivated, which eliminates a few possible sources of error. With the older turnouts we would have to more carefully consider supplying the correct operating voltage.

At the upper section of the track we can see two block signals and in front of them a small track arrangement. This will be used later for digital signal control as well as for the demonstration of braking with ABC.



The two signals in the upper section will later be used for testing the digital signal control and braking with ABC (developed by Lenz).

Also recognizable as small triangles should be the separation points, which divide the system into different sections. Although these are not yet necessary for the first digital operation, their installation facilitates later removal, for example with track occupancy detectors. For the time being, however, all sections are electrically connected to each other.

The ring line and the stub lines for feeding the traction voltage into the track sections, as well as the expected position of the control centre, are also shown. With our simple plan this is still possible from the point of view of clarity, with more complex track plans you better limit yourself to small symbols and create your own wiring plan.

This plan should be used in your mind. Does a train come everywhere to and from there also again away? Can I park a train without having to stop the rest of the train traffic? If there are change requests, we immediately use the eraser and start again with the decision making process.

## Detailed planning begins

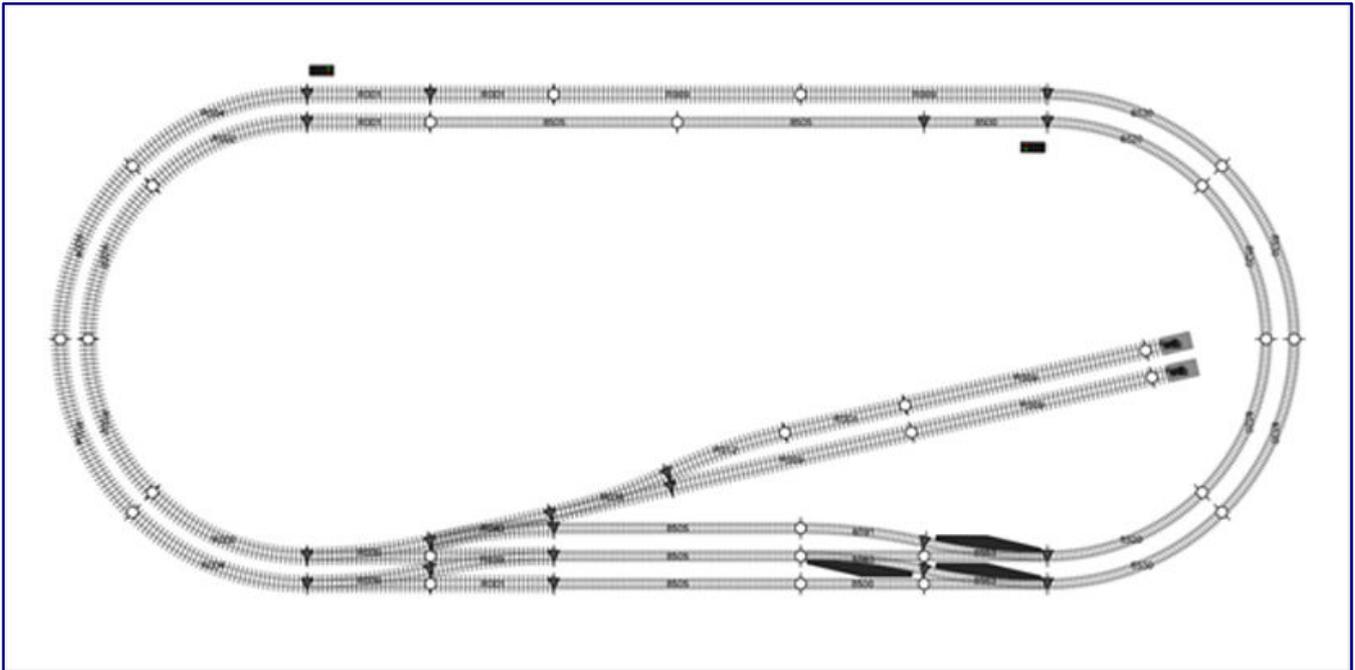
If everything appears to be to your complete satisfaction, detailed planning is the order of the day. Not every track layout can be realized with the track geometry specified by the manufacturers. Rokuhan and Märklin largely agree on track lengths and curve radii, but Rokuhan offers additional radii and switch types.

If you still remember the geometry lessons at school, you can do the detailed planning with a triangle and a compass. However, it makes more sense and is much more comfortable to use a track planning program for the computer.

Our photo on page 23 (top) is taken from the program "AnyRail" of the Dutch provider DRail Modelspoor Software. If you switch on the corresponding option in the display ("sleepers"), you can easily distinguish between the track of Rokuhan and Märklin.

The mixture of the manufacturers' track systems was planned. The Rokuhan track with roadbed, and the "bare" Märklin track, both have advantages and disadvantages, and especially the switches differ significantly. If we use both on our test track here, we can gain valuable experience and knowledge.

Once the track diagram is complete, it is easy to deduce the space required. The test layout will be a rectangular base plate measuring 120 x 60 cm (length x width). Thus, the system is still easy to handle and also offers some space in reserve.



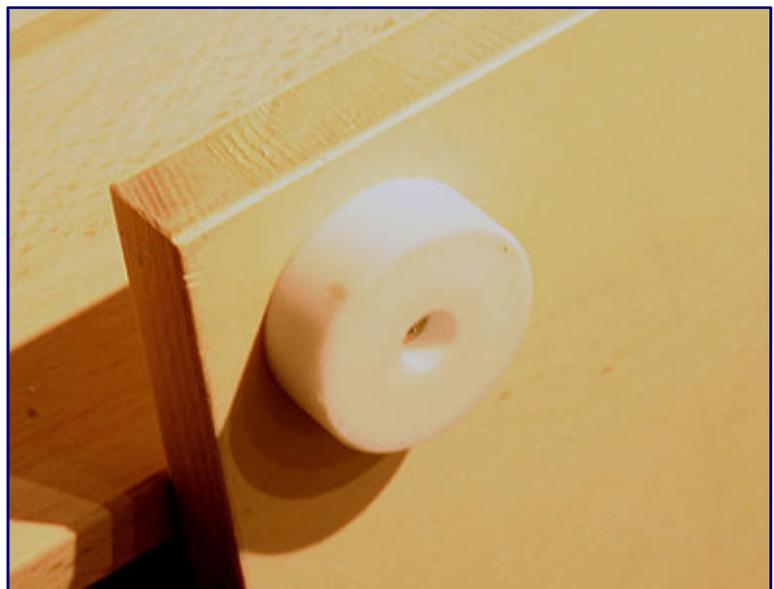
The central control unit needs a power connection with an appropriate cable. Therefore we will mount four feet under the plate. Then the mains cable can be routed through the plate without affecting the track guidance on the upper side.

For the transitions from one track system to the other, there are suitable track connectors available from Rokuhan.

However, as these prove to be a cost factor, we will push the tracks together end to end and compensate for the difference in height with a cork underlay for the Märklin track. This also saves the insulators in some places.

The Rokuhan tracks have a small recess in the bedding on the underside for each rail, which prevents the rail from slipping due to a soldering point.

At these points the feed cables can be soldered on with some chic and soldering water, so that they disappear invisibly into the bedding.



Four short legs, on which the test system will stand, facilitate the passage of the power cable through the underside.

In our test system, the cables do not run under the base plate, but intentionally above it. This makes it easier to understand all the details. In a few places we will use the Rokuhan connection cables (art. no. 7297408), so that they can also be tested in long-term use.

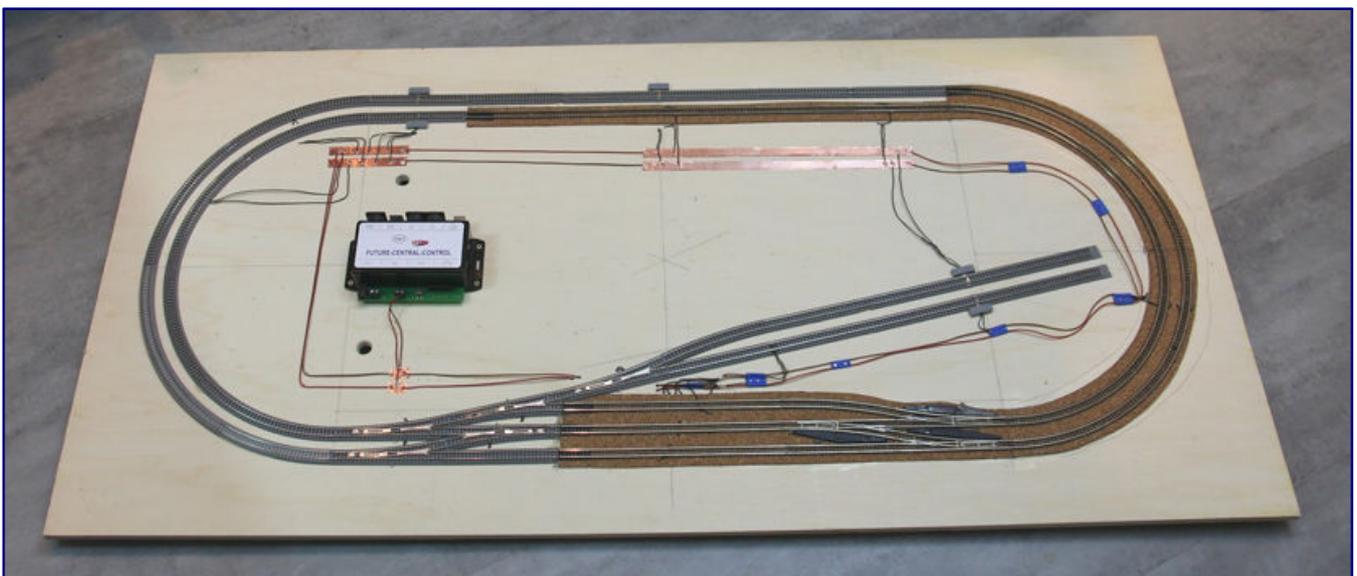


In order to gather as much experience as possible, both Märklin and Rokuhan tracks are used on the test layout.

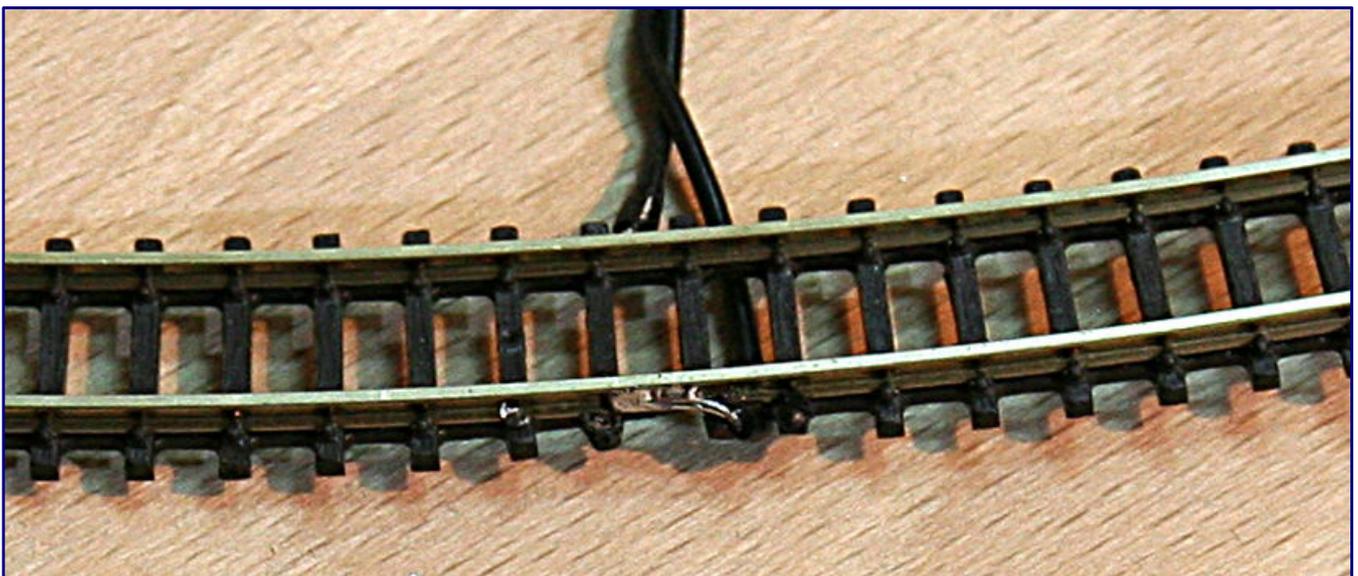
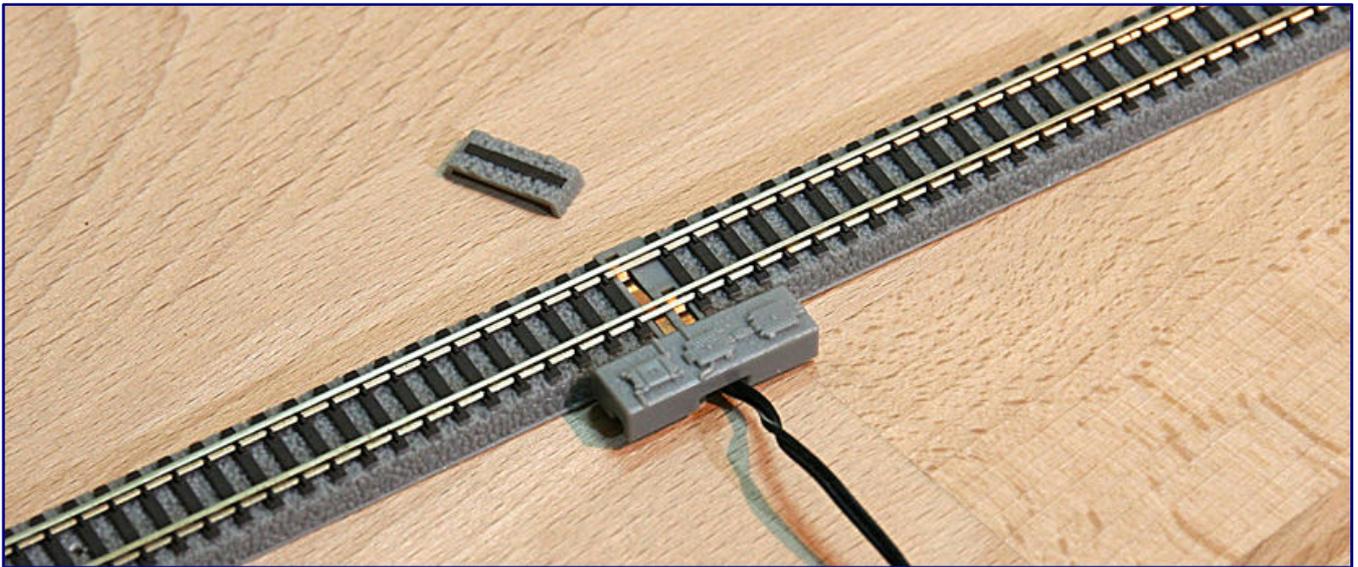
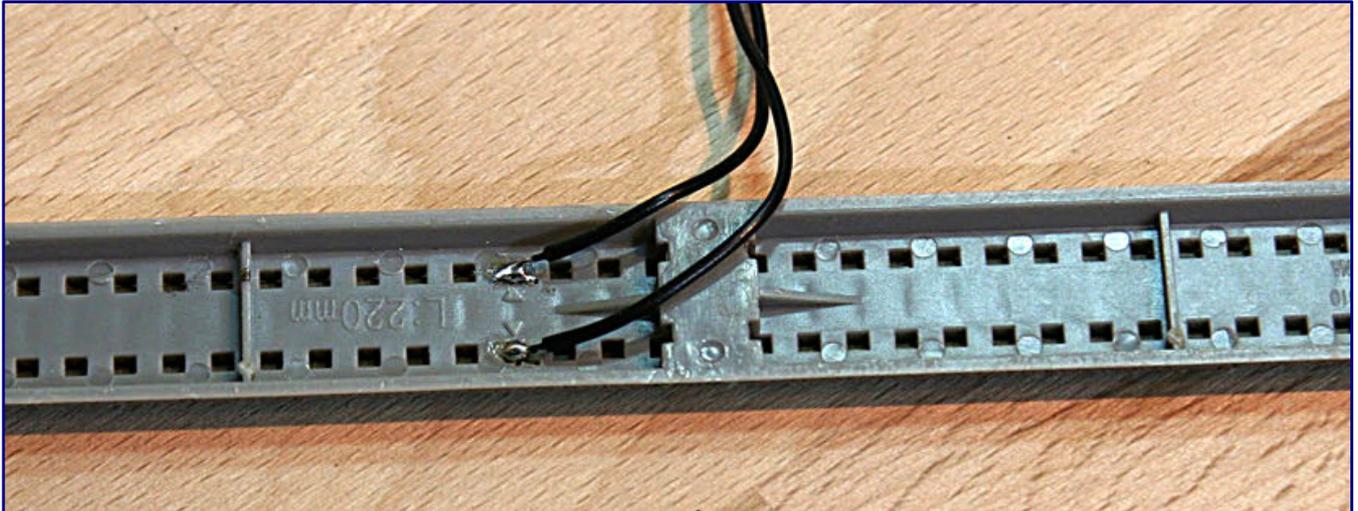
The feeder cables for Märklin tracks are either soldered to the outside of the rails or the original feeder tracks (8590) are used. In this case, however, you must always remove the interference suppression capacitor from the terminal block, as it interferes with the digital signal.

For the time being, the switches can only be operated by hand. So that we have digital control later on, we let the cables disappear safely through a hole under the base plate.

Text continues on page 26.



This is what the test oval looks like with the mixture of Rokuhan bedding track and Märklin track laid on cork in the final state.

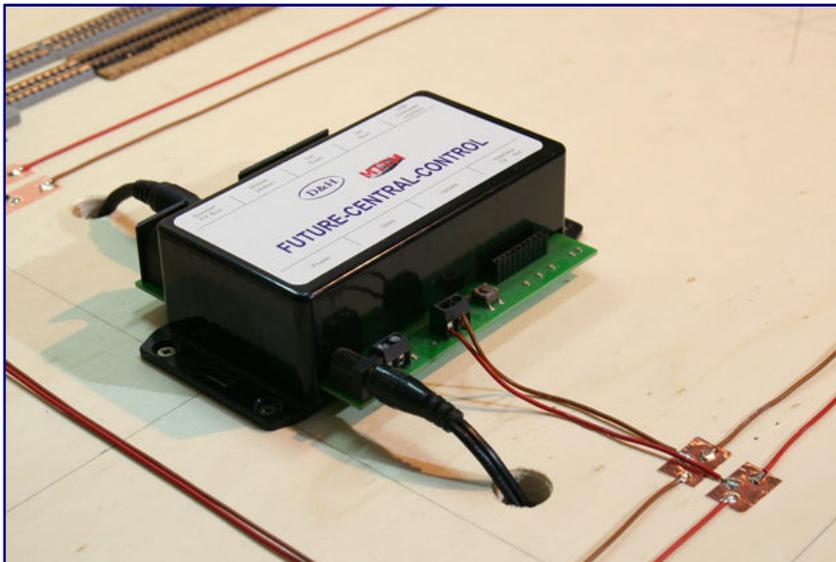


The connecting cable is soldered directly to a Rokuhan track (top photo), the solution offered by the manufacturer (middle photo) and a Märklin track with the connection soldered to the outside of the track (bottom photo).

## The choice of the digital control centre

The Future-Central-Control FCC from Doehler & Haass (D&H, also available from MTTM) is used as the central unit. It offers several advantages for our test system:

- It uses a stabilized notebook power supply (D&H PWR-100W) that can be adjusted to track Z voltage
- Internal booster power maximum 2.5 A and therefore perfectly sufficient
- Multiprotocol capable: SX1, SX2, DCC with short and long addresses (and MM)
- Connection to the PC via USB
- PC operation and control of the control panel via free PC programs D&H FCC or MTTM ST-Train light
- Direct connection to Trix Mobile Station 1 (also known as "MS1" for short)
- Reading and programming of vehicle decoders in the system protocols SX1, SX2 und DCC
- Updateable (FCC firmware)
- Capable of updating MS1, D&H busy detectors and function decoders
- Capable of updating D&H vehicle decoders of the DHxx, DHPxxx and FHxx series



We will connect the FCC to a PC and use an MS1 as a hand controller. The connecting cable of the MS1 is also routed under the base plate.

After connecting all cables and making a careful visual inspection, the test system can be switched on for the first time. If there is no immediate smoke anywhere, or if the FCC does not indicate a short-circuit, then we have probably done everything correctly.

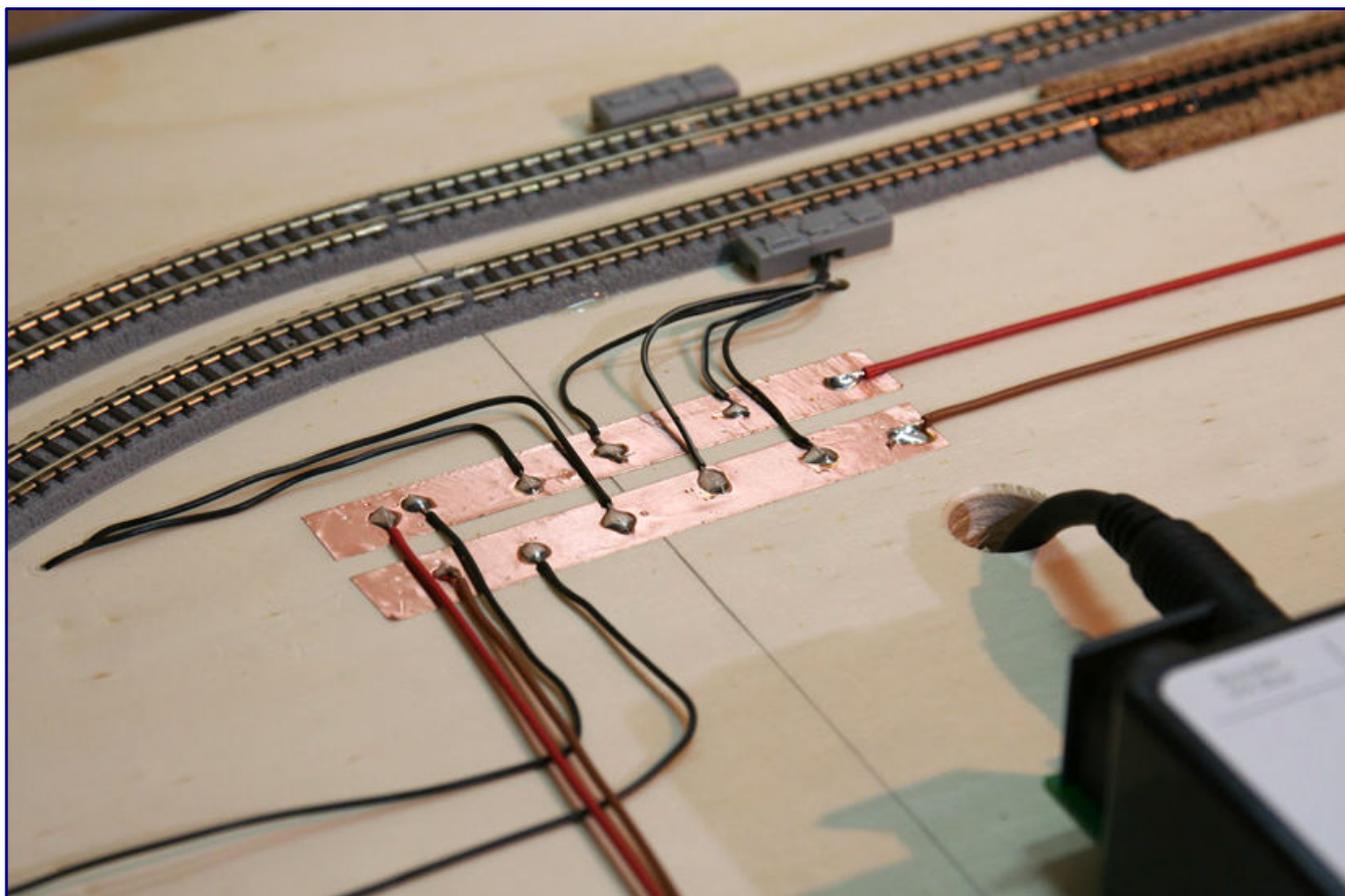
With the help of a hand-held multi-meter we can determine that digital voltage is present everywhere on the layout.



This measurement is, as already described in the first part of this series, not a correct measurement. However, for a rough test for correct contacting and cabling, it is sufficient.

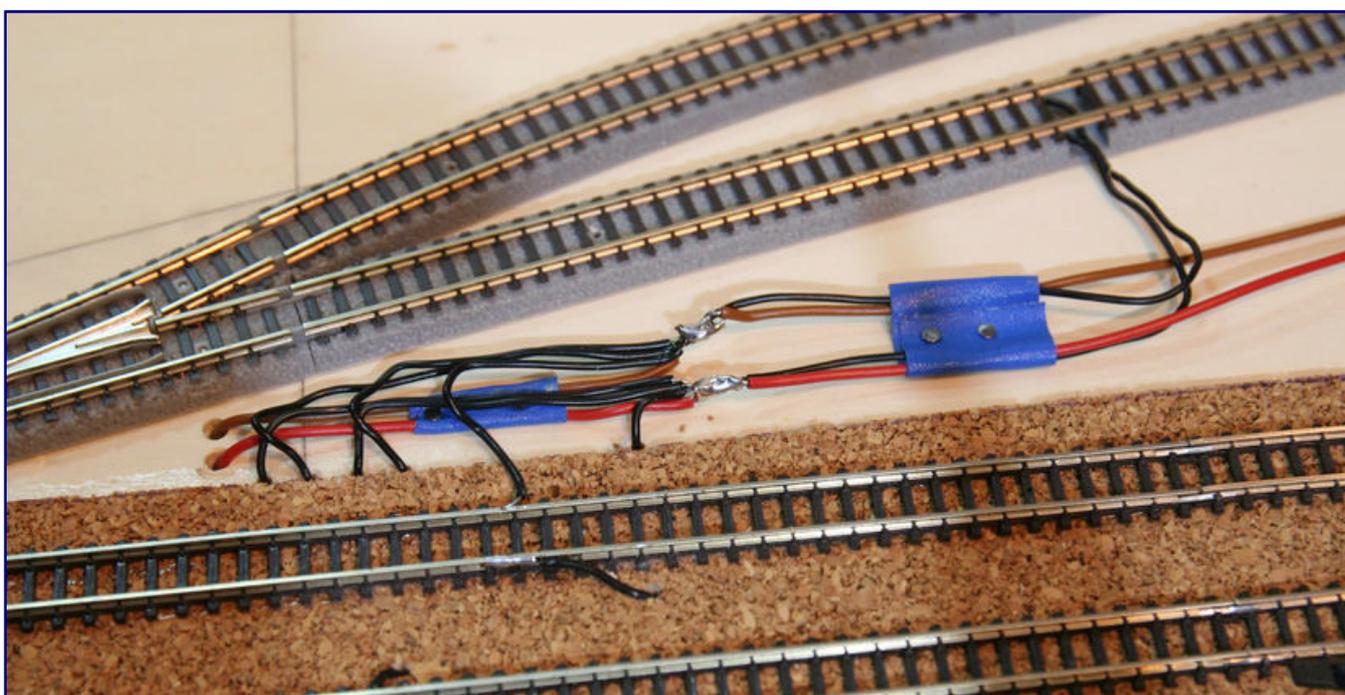
For testing purposes we used self-adhesive copper tape (Busch 1799). It sticks very well to the wooden base and the many connecting cables can be soldered easily and safely onto it. Normally, this contact strip would also disappear invisibly beneath the system.

The test system is controlled by the Future-Central-Control (photo above) from Doehler & Haass and a mobile station 1 from Trix (photo below).

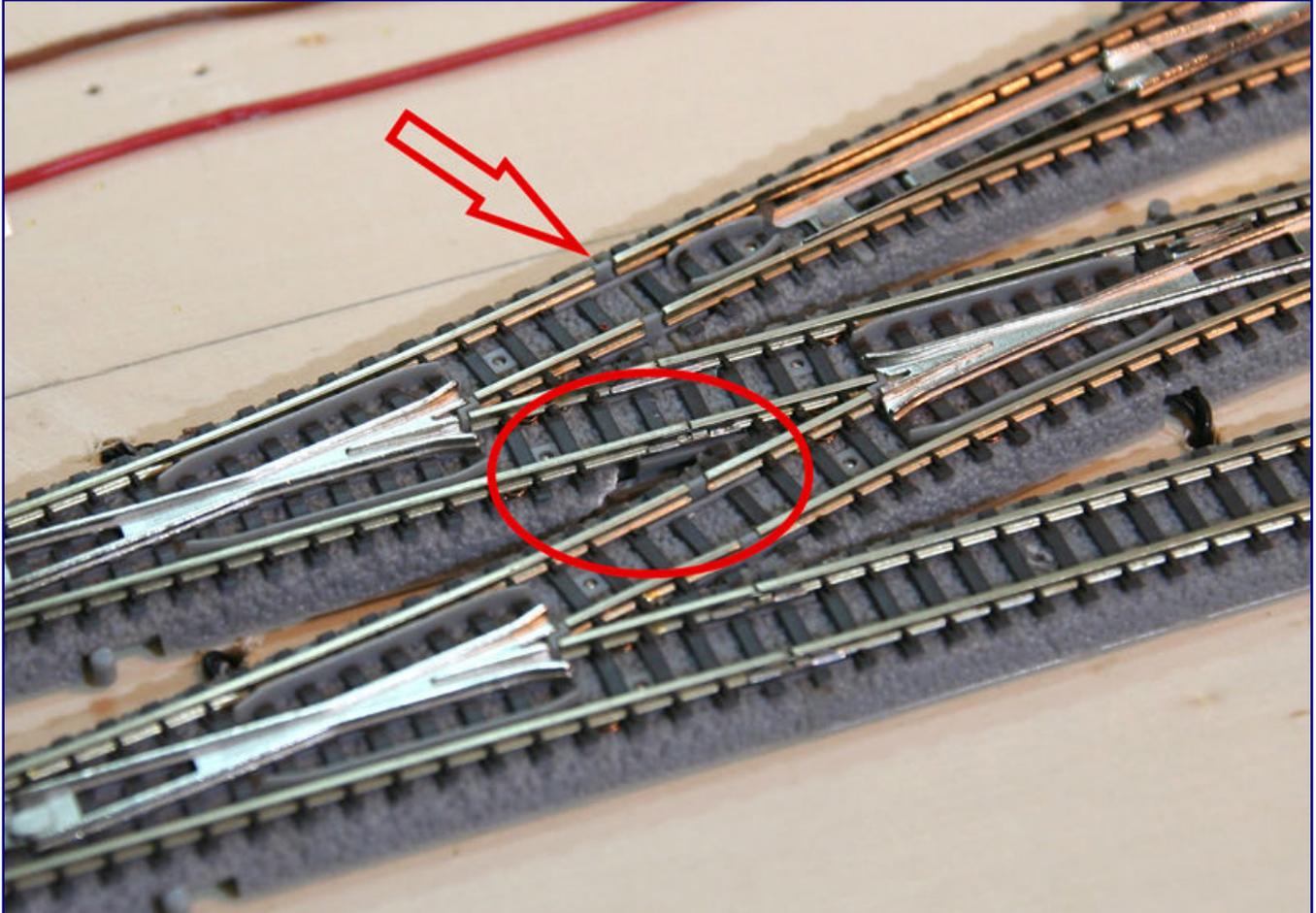


Use of the self-adhesive copper tape from Busch (1799) for soldering the connection cables to the test system (photo above) and the worse alternative in the form of a quick soldering (photo below).

The other way to connect all supply cables is by “quick soldering” of the cables themselves. The difference with the previous solution can be seen at first glance, and soldering is not really that fun.



Rokuhan's turnouts are not really suitable for close turnout routings because of the track roadbed. In order to be able to set the points correctly, the roadbed must be cut, and since there are no markings, this can only be done by eye. The bedding can also break off completely at the junctions (you can see it in the circle below, the arrow points to an insulator).



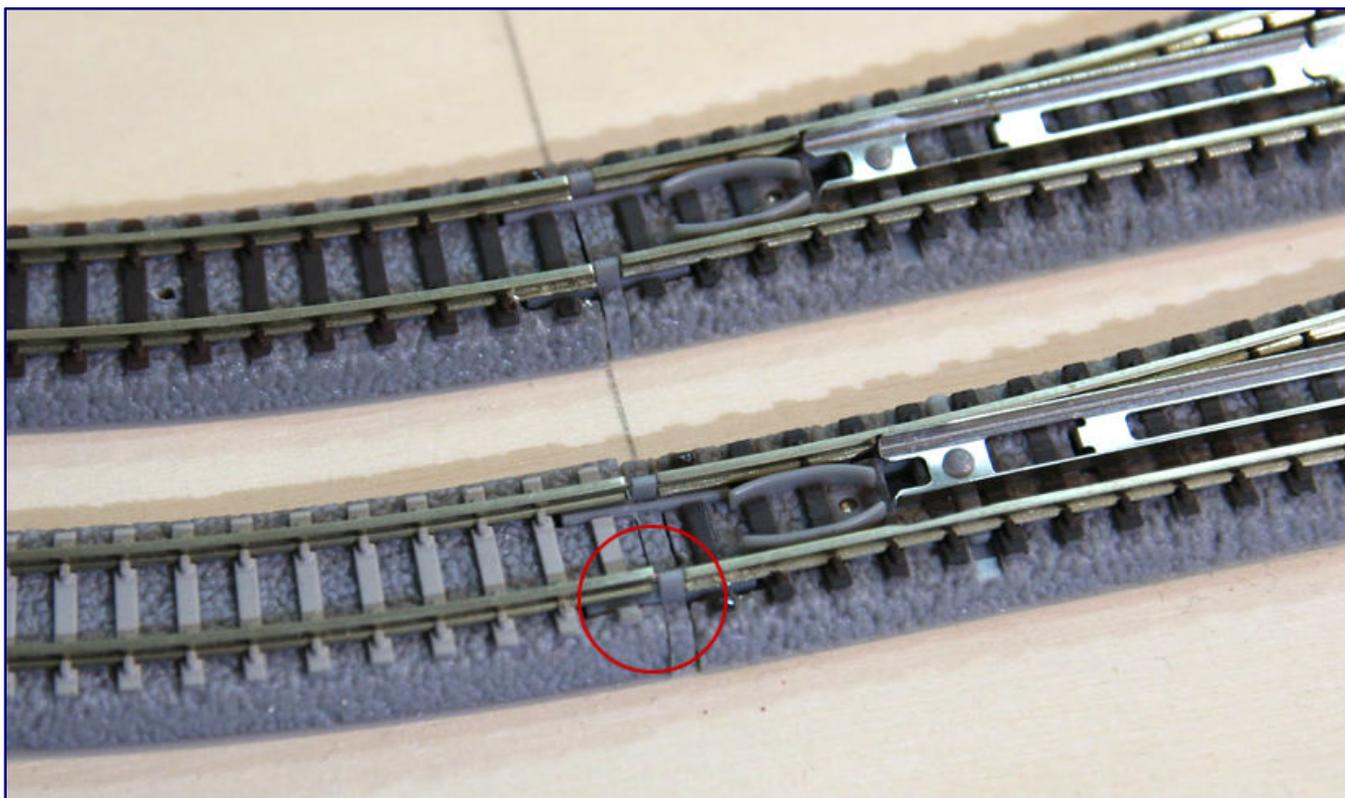
The extent to which this impairs functional safety in the long term will have to be determined. The insulators have a ballast thickness of about 1.6 mm. Applied to the track, this inevitably results in displacements and an offset in the track geometry.

The photo on page 29 shows the Rokuhan track with concrete sleepers and super-elevation at the bottom left. As there are (still) no transition tracks from the normal ones to the elevated ones, there has to be some reworking and compensation (circular marking).

The planning and construction of a new layout from paper to landscaping is the ideal case if digital operation is desired. Not all eventualities can be considered from the outset and considered, something is always missing or “jams” then, nevertheless. Even professionals still make mistakes here, as I know only too well from my own experience.

To digitize an existing system basically works in the same way. However, the subsequent division into sections and the associated rewiring or modifications of existing wiring are much more complex.

But our test system is not yet finished, either. The rolling stock is still missing, and then everything has to be tested, i.e., put into operation. This will follow in the next part.



And also in the future it will help us to explain or test digital components and digital processes. The switches and the signals need to be controlled, braking with ABC is a very interesting story, busy detectors and RailCom, track interlocking systems... Let us surprise you!

All photos (except page 20) and illustrations: Andreas Hagendorf

**Further links for this article and used material:**  
<http://www.anyrail.com/de>  
<https://www.busch-model.info/000001799.3?number=000001799.3>  
<https://doehler-haass.de/cms/pages/produkte/digitalsystem/fcc.php>  
<https://www.maerklin.de/de/produkte/spur-z/>  
<http://www.mtm.de>  
<https://www.rokuhan.de>

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Internationale Leitmesse für  
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Note for English readers: The literature section that follows is not translated into English because the original text of the books involved are in the German language. The original German is left here for information purposes only.

## Die Wagen von DB Regio **Wie ein rotes Band**

**Die Typenkompass-Reihe von Transpress hat inzwischen eine enorme Fülle und Breite angenommen. Nach und nach arbeiten sich die Autoren durch alle Themenbereiche der deutschen Eisenbahn. Sukzessive entsteht so ein hilfreiches und wertvolles Nachschlagewerk für die schnelle Übersicht. Im jüngsten Band trifft es nun die Reisezugwagen der DB-Tochter für den Nahverkehr seit der Privatisierung im Jahre 1994.**

Peter Wagner  
Typenkompass Reisezugwagen der DB Regio  
seit 1994

Transpress Verlag  
Stuttgart 2018

Taschenbuch mit Klebebindung  
Format 20,5 x 14,0 cm  
128 Seiten mit 113 Farb- und 4 S/W-Fotos

ISBN 978-3-613-71559-2  
Titel.-Nr. 71559  
Preis 12,00 EUR (Deutschland)

Erhältlich direkt ab Verlag  
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Peter Wagner ist als Autor im Transpress-Verlag bestens bekannt. Er hat an zwei weiteren Bänden der Typenkompass-Reihe mitgewirkt, die ebenfalls Reisezug- und Postwagen zum Thema hatten. Ebenso zeichnet er für das Deutsche Wagen-Archiv der Deutschen Bahn AG verantwortlich.

Das sind beste Voraussetzungen, um den Reisezugwagenbestand der DB Regio seit 1994 gezielt aufzuarbeiten und übersichtlich in einem kompakten Taschenbuch zusammenzustellen. Dieser Bestand ist keineswegs einheitlich und womöglich langweilig rot: In nun knapp 25 Jahren privatisierter Staatsbahn in Deutschland hat die Nahverkehrstochter viele Bauarten gesehen.

Je nach Herkunft und Zukunftsperspektive trugen sie auch noch abweichende Farbleider und erhielten womöglich gar keinen Neuanstrich mehr. Mancher Leser wird erstaunt sein, welches Sammelsurium an Altfahrzeugen sich noch unter dem „Dürr-Keks“ versammelte und teilweise über Jahre halten konnte. Sogar ein einzelner Speisewagen war darunter.



Peter Wagner hat alle verschiedenen Typen eingesammelt und strukturiert in sein Werk übertragen. Wie gewohnt, ist jeder Bauart eine Seite gewidmet, auf der ein aussagekräftiges Foto, eine kurze Beschreibung und eine Tabelle mit den wichtigsten Fahrzeugdaten geliefert wird.

Teilweise kritikwürdig ist hier nur die Wiedergabe dieser Aufnahmen: Häufig fehlt es an Farbbrillanz, andere Fotos sind zu dunkel wiedergegeben worden, weshalb im Fahrwerksbereich keine Details der Drehgestelle mehr preisgegeben werden. Gut gelöst ist hingegen die Strukturierung nach den Bauartbezeichnungen der DB Regio, ohne die frühere Kennzeichnung unter den Tisch fallen zu lassen. Kennern fällt es so schon beim ersten Blick leicht, die Herkunft eines Waggons zu erkennen.

So gibt dieser Typenkompass einen sehr detaillierten Überblick über alle je im Einsatz befindlichen Sitzwagen der Nahverkehrssparte. Entstehung und Besonderheiten fallen auch dieses Mal nicht unter den Tisch. Die Themenfülle dieses Bands reicht von Zwei- über Drei- bis zu Vierachsern der Normalspur, wobei besonders die Entwicklungslinie der Doppelstockwagen sehr interessant erscheint.

Eine gelungene Abrundung dieses Werks ist das Erläutern des Kennzeichnungssystems für Reisezugwagen in einem gesonderten Kapitel, das auch Laien eine wertvolle Hilfe ist, die Zahlen- und Buchstabenkürzel an den Fahrzeugen zu verstehen und nachvollziehen zu können. Gemeint sind hier sowohl die Bauartbezeichnung als auch die UIC-Wagennummer.

Auch im Kontext der Geschichte lässt Autor Peter Wagner seine Leser nicht allein. Er gibt zu Beginn des Buches über mehrere Seiten einen Abriss der Geschichte und zum Entstehen von DB Regio, geht dort auf das gültige Firmenemblem und sogar kurz auf die Strategie des Unternehmens ein. Im Bildteil sorgt hier bei manchem wohl für eine Überraschung, dass auch Schmalspurfahrzeuge im DB-AG-Bestand zu finden waren und sind.

Kurzum, wir finden hier ein Buch, das zum Muss für viele Eisenbahnfreunde wird. Wer diese Reihe als Nachschlagewerk angelegt hat, kommt eh nicht daran vorbei. Wer ein Freund der modernen Bahn ist, wird ein kompaktes und übersichtliches Nachschlagewerk wie dieses ebenfalls nicht missen wollen. Die kleinen Schwächen, die wir gefunden haben, mindern seinen Wert jedenfalls nicht.

**Publishing pages with reference possibility:**  
<http://www.transpress.de>

## Die Baureihe 403/404 im Portrait Zug der Zukunft von einst

**Für das geplante IC-Netz ließ die Bundesbahn ab 1969 einen neuen Schnelltriebzug entwickeln, der bald unter Kosenamen wie „weißer Hai“ oder „Donald Duck“ bekannt wurde. Diesen „Zug der Zukunft“, wie er offiziell dargestellt wurde, sollte eine hohe Verwandtschaft mit den S-Bahn-Triebzügen der Baureihe 420 prägen. Ein neues Baureihenportrait zeichnet seine Geschichte von der Entwicklung bis über die Abstellung und laufende Aufarbeitung nach.**

Pit Meyer  
Die Baureihe 403  
Flughöhe „0“ bei der Deutschen Bundesbahn

EK-Verlag GmbH  
Freiburg 2018

Gebundenes Buch  
Format 21,0 x 29,7 cm  
248 Seiten mit 390 teils farbigen Abbildungen

ISBN 978-3-8446-6028-9  
Best.-Nr. 6028  
Preis 45,00 EUR (Deutschland)

Erhältlich direkt ab Verlag  
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Elegant, luxuriös, schnell: Ab 1973 sorgte der Schnelltriebzug der Baureihe 403/404 für Aufmerksamkeit, wo immer er auch auftauchte.

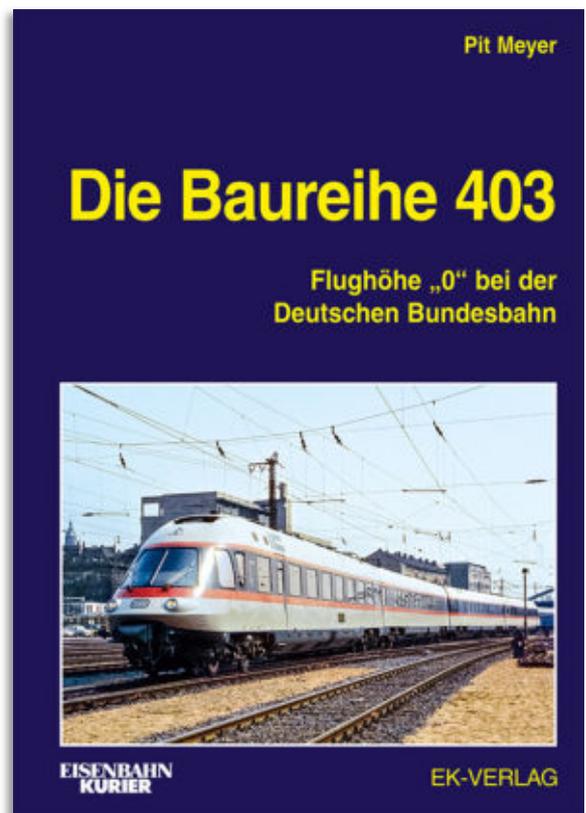
Sein progressives Äußeres war einmalig und auffallend, technisch sollte er ein Erprobungsträger, unter anderem für eine gleisbogenabhängige Wagenkastensteuerung, sein. Zurück ging seine Entwicklung auf Entwürfe eines DB-Ingenieurs von Anfang der sechziger Jahre.

Seine enge Verwandtschaft zur für den S-Bahn-Verkehr entwickelten Baureihe 420 sollte Entwicklungs- und Fertigungskosten sparen. Doch er war auch in anderer Hinsicht etwas ganz Besonderes: Seit 1945 war kein elektrischer Fernverkehrstriebzug mehr entwickelt worden.

Was bei der DB zuvor auf die Schienen kam, gehörte der Dieseltraktion an oder war, wie etwa die ET 56 und ET 30, für den Nahverkehr vorgesehen. Nur der technisch längst überalterte ET 11 war ein echter Fernverkehrszug gewesen, die Zukunft hingegen schien Ende der Sechziger Gasturbinenzügen zu gehören.

Der „Zug der Zukunft“, wie ihn die Bundesbahn werblich herausstellte, nahm vieles vorweg, was für den ICE lange Zeit selbstverständlich schien. Gemeint ist die über alle vier Wagen verteilte Antriebstechnik. Jeder End- und Mittelwagen besaß eine komplette elektrische Einrichtung mit Transformatoren und Fahrmotoren. Nur Stromabnehmer und Führerstände waren den Endwagen vorbehalten, ohne die nichts ging.

Das sorgte zusammen mit der Aluminium-Leichtbautechnik für ein geringes und gut verteiltes Fahrzeuggewicht sowie hohe Beschleunigungswerte bei einer Flexibilität in der Zugzusammenstellung



und -länge, mit der fest gekuppelte ICE nicht mithalten können. Eine Serienbestellung oder das Nachordern nicht angetriebener Mittelwagen unterblieb jedoch.

Nur kurze Zeit liefen die „weiße Haie“ im IC-Dienst, bevor mit deren zweiklassiger Umstellung schon 1979 wieder Ende war. Seine große Karriere startete der Schnelltriebzug als Lufthansa-Airport-Express ab 1982, mit dem er spätestens auch als „Donald Duck“ bekannt wurde.

Pit Meyer zeichnet diese Entwicklungs-, Betriebs- und Einsatzgeschichte detailliert und präzise nach, zur Einführung wird über geschichtliche Rückblicke der passende Kontext hergestellt, um allen Ausführungen gut folgen zu können.

Das neue EK-Baureihenbuch widmet sich neben den wagenbaulichen Neuerungen und im Zug erprobten elektrischen Komponenten übrigens auch der langen Standzeit und der schließlich doch noch angegangenen Aufarbeitung aus privater Initiative. In Summe bedeutet dies einen ungewöhnlichen Lebensweg mit Licht und Schatten, den vermutlich kein anderes Schienenfahrzeug vorzuweisen hat.

Unsere hohen Erwartungen wurden dabei stellenweise sogar noch übertroffen. Dazu beigetragen haben auch der gute Lesefluss und erkennbar ausgiebige Recherchen, die für einen hohen, fachlichen Tiefgang sorgen. Viele der im Band vermittelten Fakten dürften nur wenigen zuvor bekannt gewesen sein.

Beispielsweise relativiert der Autor die stets betonte, hohe Verwandtschaft zum S-Bahn-Triebzug 420 oder beschreibt die nicht einfache Namenssuche der DB für ihren neuen Paradezug, welcher griffig wie auch positiv besetzt sein sollte. „Schienen-Jumbo“ kam wegen Assoziationen zu eng bestuhlten Flugzeugen nicht in Frage.

Stellenweise störend sind nur, gerade für einen EK-Titel auffallend, viele Schreibfehler unterschiedlicher Art in fast allen Kapiteln. Sie stören bisweilen den Lesefluss, aber glücklicherweise nicht das Verständnis. Allerdings erwecken sie den Eindruck, dass dieses Buch unter großem Zeitdruck abzuschließen war.

Gewohnt aussagekräftig und ansprechend gewählt wie auch wiedergegeben sind die vielen Bilder, die auch wieder in einigen Farbteilen gezeigt werden. Der Titel ist in Summe daher einfach ein Muss für die vielen Freunde dieses schnittigen ICE-Vorgängers und deshalb eine klare Kaufempfehlung.

Wir nominieren das Buch für die Neuerscheinungen des Jahres 2018 in der Kategorie Literatur.

**Publishing pages with reference possibility:**  
<http://www.eisenbahn-kurier.de>  
<https://www.ekshop.de>

Open house at Märklin

## A train through the whole city

*In the past few years, an open day took place alternately with the Märklin Days (partly including the International Model Railway Exhibition). This year it served to open the first construction phase of the future factory museum, aptly referred to as the Märklineum, and to introduce it to customers. In the inner courtyard of the factory, on the opposite side of the gate passage, the 44 1315 will welcome visitors to Göppingen.*

The Kornwestheim freight station is the second largest train formation facility in Baden-Württemberg. Even in the steam locomotive era, the city was of great importance for the railway and so the city fathers decided to establish a railway museum there.

In 1981 the 043 315-1, an oil-fired locomotive of the later years, which was taken out of service on 27 October 1977 in the Emden station, was purchased for this purpose and displayed as a memorial in its new home near the railway station.



Arrival of 44 1315 at Göppingen railway station by rail. We continued to the new Märklineum by heavy transport on the streets, where it was lifted onto its pedestal in the early morning of 13 September 2018. Photo: Märklin

When the idea failed to come to fruition, the steam locomotive finally moved on to the southern German railway in Heilbronn. Since its condition did not improve there, the town of Kornwestheim offered it to Märklin as a free permanent loan for exhibition, as the Göppingeners were looking for a suitable locomotive with radiant power for the future Märklineum.

Just in time for the open day on 14 and 15 September 2018, the 130-ton (metric) heavyweight started its journey to Göppingen. At first the journey started by night on the rail to the track construction company Leonhard Weiß, later from there, separately for the locomotive and the tender, by heavy transport on the streets to the new location in the inner courtyard on Stuttgarter Straße.



The heavy freight steam locomotive is still standing on its pedestal without a perimeter barrier. Together with the display stand with track section, it is supposed to remind people of Märklin packaging and was waiting for the guests on the following two days.

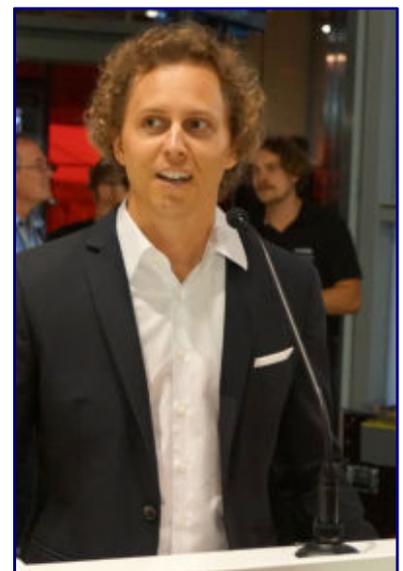
In the early morning of 13 September 2018, the Jumbo was finally lifted by two cranes onto the concrete foundation with a track. According to press reports, this transport alone has already cost 40,000 euros.

The old lady was built by Krupp in Essen in 1943, and it was reconditioned externally. The roof, in particular, had suffered from being exposed to weather for a long time, and moisture may have penetrated under the boiler casing and caused serious damage to the lower part of the boiler.

Nevertheless the enthusiasm was high and with diligent work it was prepared for its new location, which could still be done for its presentation. On the very first day it carried new, albeit printed, signage with its old number 44 1315. In the sunshine, the heavy machine cut a very fine figure and greeted the visitors to the main factory.

When the first construction phase of the new factory museum was opened on the evening of the arrival before an invited round, all the speakers were full of praise for Märklin's enormous investment and the impressive eye-catcher in the courtyard of the factory and Märklinium.

Kornwestheim's First Mayor Dietmar Allgaier was particularly pleased and explained the story of how the municipality came into possession of this locomotive. He wished it a good future in Göppingen and stressed the thousandfold interest of people in the transfer to its new location.



Florian Sieber was delighted with Märklin's new "heraldic animal" and participated in the opening ceremony for the first construction phase.



Dietmar Allgaier, First Mayor of Kornwestheim, explained the permanent loan to Märklin.

Märklin's managing partner Florian Sieber proudly announced: "Märklin has a new heraldic animal" and thus skilfully alluded to the Swiss crocodile, which has stood for the history of the traditional company like no other locomotive motif so far.

The new museum is supposed to skilfully combine Märklin's history and future, which is why he was pleased that, in view of the many onlookers who had travelled to Märklin especially for this purpose, and with a view to the media response, the 44 1315 is already being associated with Märklin.

speeches, the architect described his task of architecturally connecting the part of the factory building intended for the presentation of the collection and exhibition complex with the remaining "strong building construction" from the eighties, in which a bistro will be located in the future, and which will continue to be used.

"A train through the whole city" was the journey to the Märklineum, all speakers agreed in their conclusion. In the following

The task was difficult, because he had to work with a given, rather tight budget. But he found the solution to be both successful and inexpensive. "Nothing was cheap here", Florian Sieber countered at this point, and referred to unplanned cost increases that now had to be borne.

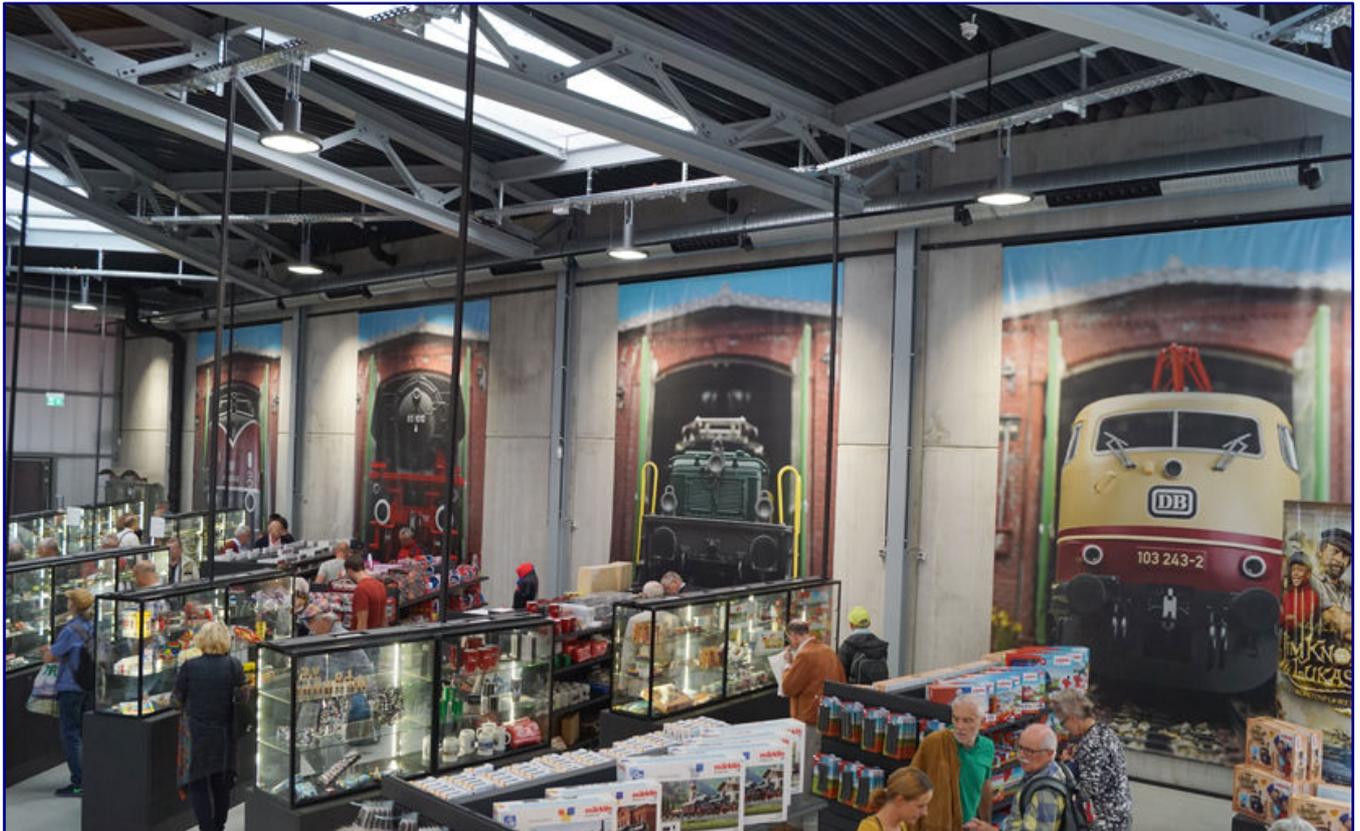


The Märklineum adjacent to the Märklin factory will welcome its visitors at the corner of Stuttgarter Straße / Reuschstraße in Göppingen.

## The new entrance area

The architectural balancing act with an almost circular steel frame construction, which is coincidentally reminiscent of the round houses built many times in the 19th century, where the turntable was located in the covered centre of the circle, was successful.

This request is underlined by pictures of open shed gates attached to the walls, showing large murals of the Märklin H0 models of V 200 042, 03 1012, crocodile and 103 243-2.



The architecture of the central building, together with the murals of four Märklin models, gives the visitor the feeling of standing in an old round house. The cashier's area is located in the middle of the room where the turntable would be.

The cash register is located in the middle of the large room, which presents the current range of the company's own products in a very appealing way, and also offers them for sale together with accessories from partner companies.

In the future, tickets will also be purchased there, which will then be used to open up access to the exhibition rooms. A repair service will also be available here, while the popular treasure trove with sales items and 2nd choice items occupying an adjoining room somewhat separated from the display area.

In the future, visitors will park in the inner courtyard of the main factory and take their first look at the large steam locomotive in the Märklin slipcase at the entrance. Then, it will have a roof over its head, reminiscent of Märklin packaging, and thus create a link to the market leader's models.

We were not surprised that Märklin was again able to enjoy a large influx of visitors. The long queue of visitors sometimes stretched across the entire courtyard at the factory gate. And they were all full of praise for Märklin and the Sieber family's huge investments in the Göppingen site and for the design of the new museum and display area.



On a display, Märklin already showed the concept and integration of the large exhibition facility already under construction into the works museum (top photo). This year's museum car was displayed in the immediate vicinity (photo below).

While food and drink was provided in the works yard, conversations were held between model railway enthusiasts, and children could let off steam on a bouncy castle. With the help of the LGB friends from the Lower Rhine, the 50th birthday of the garden railway was celebrated on their demonstration facility. Some Märklin friends obtained a wagon next door, on which their photo had been digitally printed in the factory.



Food and drink was provided in the factory courtyard. Here there were enough places to rest or to have a technical discussion. Also, tents of the customer clubs were located here.

There was also an information stand about the large gauge, where the latest new products could be seen in full splendour and also tested. Märklin had also set up a special sales tent for bargain hunters in which remaining stocks of models of all gauges were offered at particularly favourable prices.

Not to be forgotten was the club stand in one of the tents. During 2018 the Märklin Insider Club is 25 years old. In addition to the Insider gift in the form of a mouse pad, which can also be used as a cleaning cloth for spectacles, anniversary celebrants received a bottle of anniversary champagne and a photo voucher for a portrait that could only be redeemed at a stand in the factory.

## Factory tour and special cars

Every open day a department of the Göppingen production is especially highlighted and honoured with special wagons.

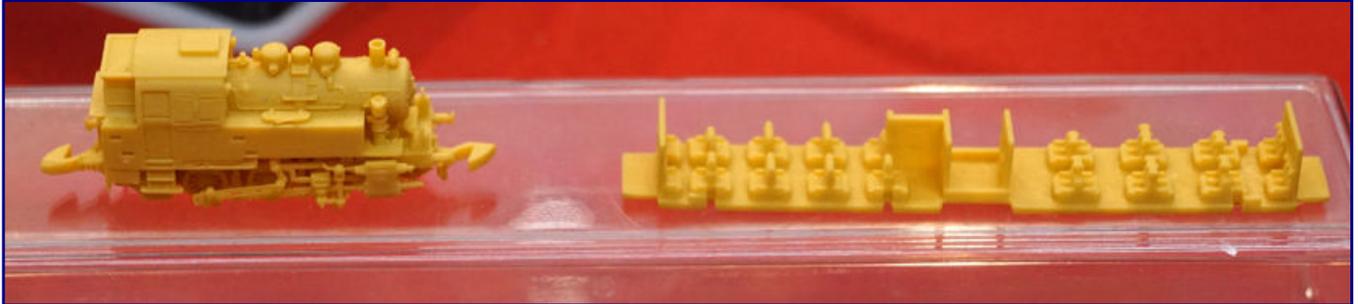
In 2018 the models of a covered freight car of the type Dresden in the tracks H0 and Z (Art.-No. 86116) in grey paint were dedicated to the department "FG 150" (painting). As always, they were in great demand and the Z scale model was almost sold out by the end of the first day.



This year's special car (Art. No. 86116) was dedicated to the painting department.

Märklin also presented itself to its visitors as an attractive employer and trainer, because the trainees showed work pieces from the training workshop and answered questions at

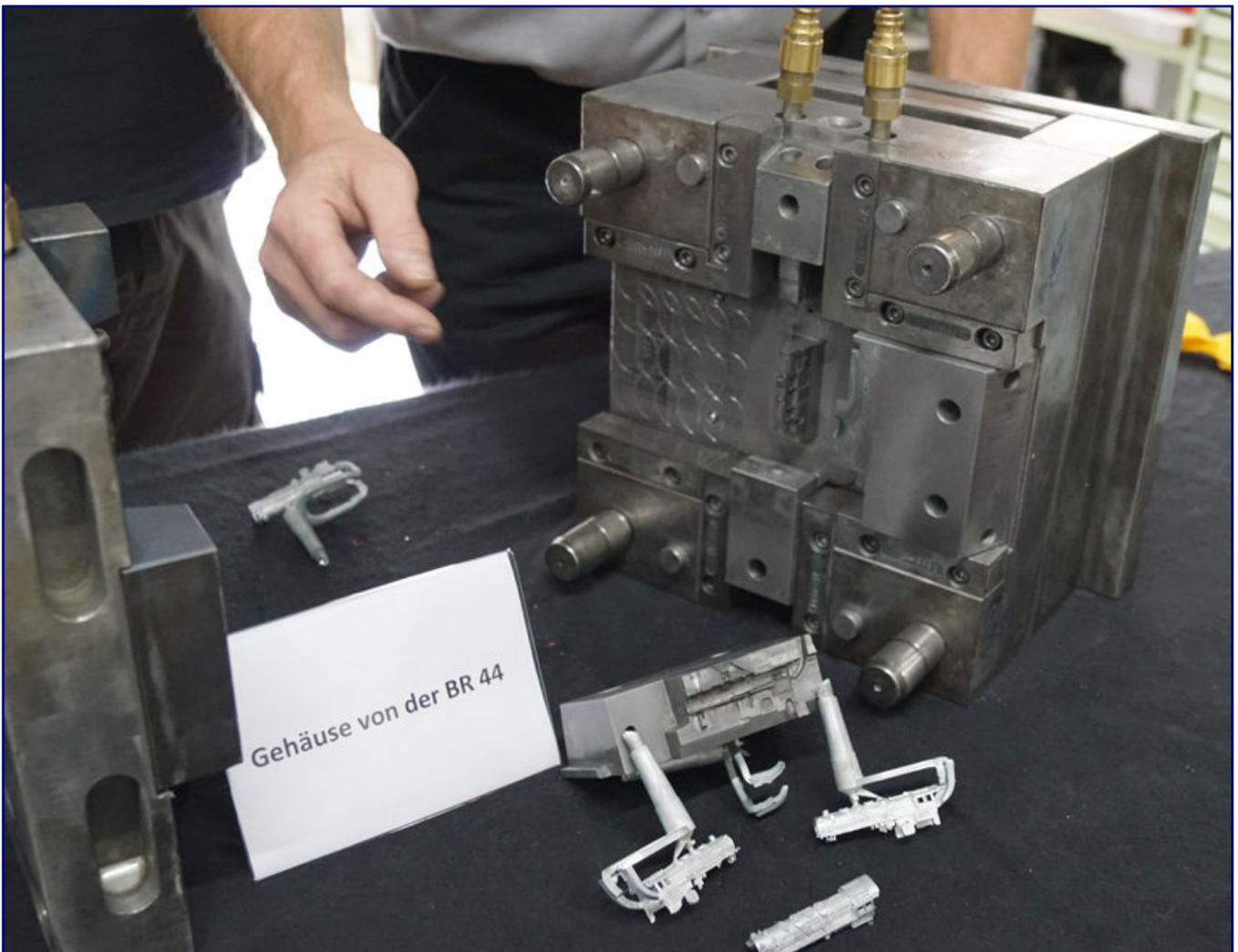
a stand in the parking lot. Märklin Engineering also presented its new innovative activities similarly, this time using 3D printing technology, as an example, with examples from current production.



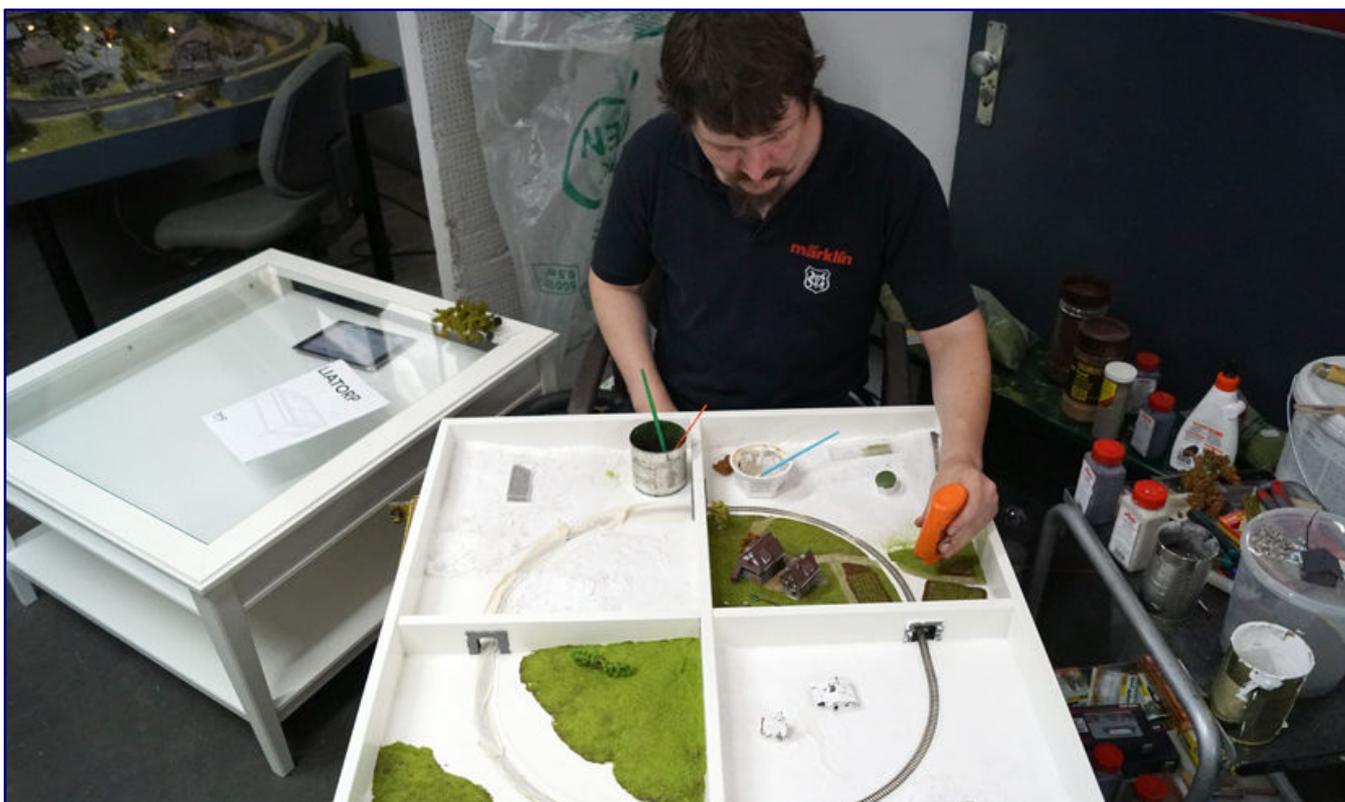
Märklin Engineering also presented the importance of 3D printing technology for modern production using the example of the 80 series and passenger wagon interior fittings.

These included samples of the 80 series tender steam locomotive and interior fittings for passenger wagons made of UV-curing polymers (resin), or cover templates made of other plastics. During an attentive tour these parts could be observed again later.

Text continues on page 43.



Zinc die-cast housings of series 44 in nominal size Z together with the heavy steel mould and associated gate valves explained the technology of metal die-casting at the Göppingen main plant.



The Märklin plant engineering department displayed the Lummerland layout, which even the little ones were enthusiastic about (top photo). Before the visitors, a four-season Z-gauge layout was built in parallel in a Swedish living room table (photo below).

Traditionally the tour of the works always begins in the foundry, where the moulds and results of zinc die casting were displayed on the basis of a series 44 in a scale of 1:220. One production station further, the boilers of the tender steam locomotive class 65 in gauge H0 were built.

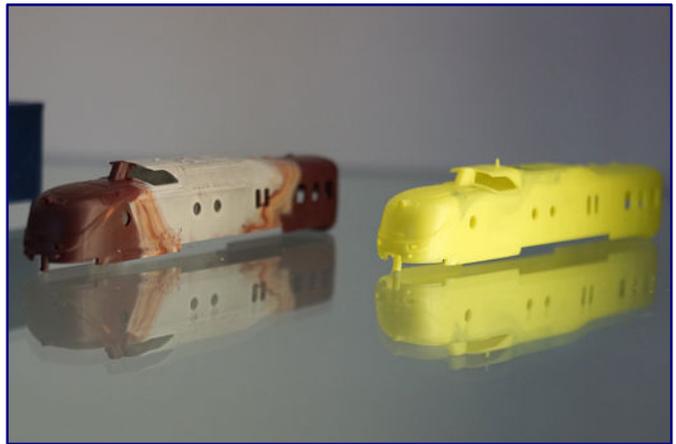
Further along to casting post-processing, the layout engineering department did not miss the opportunity to show examples of its expertise. The most popular example was certainly the "Lummerland" layout, which had already been shown at a number of trade fairs and was particularly popular with the youngest visitors. The ongoing construction of a four-season layout in Z gauge, which is placed under glass in a living room table to be shown in a Lübeck furniture store, was also displayed.



The cast housings are prepared for the further manufacturing and assembly steps using various deburring processes, including beam deburring (top photo). In electroplating, metallic surfaces are refined and hardened, and also chemically blackened. The opened, filled container (photo below) shows how the parts to be processed migrate into the bath.

How cast housings were prepared for further design by hand or automatically could be easily observed by means of vibratory grinding and jet deburring. The viewing windows of the machines also allowed impressions of the metal brushes, which rework the edges of the models. Holes for attachments are also drilled here in CNC machining centres.

The adjacent electroplating shop also refines or hardens the surfaces. Their tasks include copper plating and subsequent bright or black nickel plating of locomotive wheels, as well as chemical black colouring of cast blocks or phosphating of the later painted housings. A still very young chapter at Märklin is brass injection casting, which was explained using the 80 series in Z scale - this was already explained in detail in issue 6/2017.



The design department presented the CAD views of the new 65 series for size H0 (top left photo), the injection moulding department showed various housings, including multi-coloured ones, from its production, such as the VT 115 powercar here on a scale of 1:220 (top right photo). As a souvenir to take away there was a transparent yellow egg spoon (photo below) which was ejected from the injection moulding machine in front of the visitors.

Stamping shop (e.g. rail plates), pre-assembly (of building components), injection moulding department and CAD design were to be seen united in one hall. The employees demonstrated the modern design of models on the screen using the latest model of the 65 series. The injection moulding was shown with samples in a showcase, including two-colour ones, and actively demonstrated with a small take-away present.

The 98% transparent polycarbonate and 2% colour concentrate were used to create yellow fluorescent teaspoons in front of visitors, which are also approved for infant food. The parts that could not be overlooked were therefore certainly a good idea for the many families who did not want to miss the visit.



This was followed by the specially highlighted colouring department, which consists of automatic spraying, printing and hand painting. Before the eyes of the visitors, the Indusi measuring truck (H0 gauge), its grey roof painted with a spray paint, the side walls protected by folding stencils, was handed over to the visitors.

On the basis of documents, tampons and clichés, other employees explained the tampon printing technology that Märklin has been using for decades, and that today continues to hold a top position in the model railway industry.



It could be seen in action on the still very new 16-fold rotary printing machines of the Italian company Tosh. But the up-and-coming digital printing could also be seen here using the example of photographic motifs with colour gradients.

A member of the hand painting team was able to captivate the audience by applying the boiler rings by hand with a brush to steam locomotive boilers clamped in a tool. Last but not least, the automatic circular spraying machines rounded off this part of the production.

Again and again we are impressed by the accurate manual attachment of boiler rings to models of all tracks (picture above). In the automatic spraying shop (picture below) we met the 3D printing stencils of Märklin Engineering again, which drive with the steam locomotive chassis into the automatic round spraying machines.

Parts to be painted all around and over the entire surface, such as frames, move past the spraying nozzles of these machines in a rotating, clamped manner. The pictures of the drive axles protected stencils from 3D printing, which had previously been seen at Märklin Engineering.

The CNC-controlled milling machines and lathes in the automatic lathe shop allow less insight. For the observer, the result is more important. Be it relatively large parts such as steel buffer inserts for H0 gauge or small elements such as brass N gauge worms, they all have the same precision.

The smallest parts were steel bolts for the linkage of a Z gauge steam locomotive to the driving wheels. These also consist of an outer rotating part, which then moves to the electroplating shop, and an injected plastic insert for the spokes and insulation against the axle.

Slowly the tour through the production ended, because all necessary preliminary work was now known to the participants. During locomotive assembly, the components were finally assembled into models, tested and set aside. If you so desired, you could buy a locomotive in scale 1:87 and assemble it yourself.



Examples of parts produced in or at least with the assistance of the automatic lathe shop: Steam locomotive wheels (with injection moulding insert), gear wheels, buffers, worms and, as the smallest parts, attachment bolts for the linkage of a Z gauge steam locomotive (shown far right in the picture).

On the way to the exit, however, the quality assurance staff also gave impressions of their work. However, only the children were allowed to enter the test room and set various models in motion at the test facilities, and send them on their journey over difficult and challenging sections of the route.

Impressed and probably without exception fascinated, many visitors now acquired one of the already mentioned special wagons at the exit to preserve their impressions and to get a souvenir. For the children there were games in the next room and the opportunity to paint white examples of different wagon models themselves.

Time was up much too fast. At 17:00 on Saturday the gates finally closed, admission to the factory was possible up to one hour before. Only the shop in Märklineum remained open one hour longer, thus securing access to the lockers. If you were hungry for new acquisitions, you could also redeem a 10% discount voucher, which was issued at the end of the production tour.

There will certainly be a repeat in two years' time, because the rush for the open day seems unbroken. But before that, next year's Märklintage (Märklin Days) takes place again, the museum's exhibition areas are likely to open their doors at the same time.

Organizer pages with own reports:  
<http://www.maerklin.de>

# Eisenbahnfreunde Marsberg e.V.

Sa. 13. Oktober 2018  
So. 14. Oktober 2018

## „Fahrtag“ in Westheim, Waldecker-Straße im ehem. Getränkemarkt



**Samstag 13 Uhr bis 17 Uhr**

**Sonntag 11 Uhr bis 17 Uhr**

- Betrieb auf der **35** m langen Modulbahn „Im Diemeltal“
- Modelle von Spur I – Spur Z
- Spur 0 Anlage der IG Miniatur-Münsterland / Münster
- Modellbahnbörse

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Readers' letters and messages

## Zetties and Trainini in Dialogue

*Thank you for each letter to the editor and all the feedback that reaches us. Write us (contact details see imprint) - Trainini® lives from dialogue with you! Of course, this also applies to all suppliers in Z gauge, who would like to introduce innovations here. A representative image is our goal. Likewise, here we note any events or meetings with a significance to Z gauge reference, if we are informed in time.*

To the agricultural engineering contribution in **Trainini®** 8/2018:

Many thanks for the stimulating article at harvest time. I immediately checked my layout and, in fact, the Artitec combine is already in use in Swabia near "Hobbingen", driven by an unknown farmer's wife.

Christian Liebau, per E-Mail



The MF 830 combine harvester from Artitec in harvest operations on the Hobbingen layout. Photo: Christian Liebau

**Letter to the editor on the consequences of a layout closure:**

According to Atlas, the production of the new Z track system will not be effected (only the rolling stock):

<https://shop.atlasrr.com/b-atlas-rolling-stock-and-locomotive-factory-closure.aspx>

In the AZL forum there is a non-exhaustive list by Rob Albritton (post from August 1, 2018) about companies affected by the closure of AFFA. In this thread he also comments about the future of AZL: <http://www.azlforum.com/thread/1273/important-news?page=2>.

Herbert Angliker, Basel (Schweiz)

Answer from the editorial staff: Several of the affected companies have in the meantime commented on the consequences on their websites. AZL refers to the origin of its products also from Korea, Germany and the United States with the consequence that not the entire production is affected, particularly since new products are still available in the distribution and stock. Micro-Trains is, according to its own representations, not affected in Z gauge, while Atlas is not affected by the track system, which is why there should be no impact whatsoever on Z gauge. The listing of Bowser in an AZL article is still unconfirmed for us, which could have effects on the supplier Full Throttle. According to AZL, they have started to transfer their moulds in the meantime and would like to start negotiations soon for production in other location(s).

**Surprising autumn new products from Märklin:**

This month, Märklin has announced its new autumn models and surprised us with our track gauge, which also includes a new shape.

The expected models include the 2018 Christmas car (Art. No. 80628), a refrigerated car with a festive motif. Traditionally, it is packaged as a tree decoration. For this year, it will consist of a red-transparent bell that allows viewing the model packed inside.

The three-part freight wagon package "Staufen-Bräu" (86603) looks like an old acquaintance, because the Tehs 50 refrigerated wagon of the brewery is joined to the wheel by two Württemberg style specimens with a brakeman's cab, reminiscent of an early museum wagon.



They do, however, have different car numbers. In addition, all three models have a slightly aged body and chassis, ex-works.



This brings us to the new construction among the autumn novelties. It comprises two basically identical car types, which only differ slightly in detail depending on the period of use.

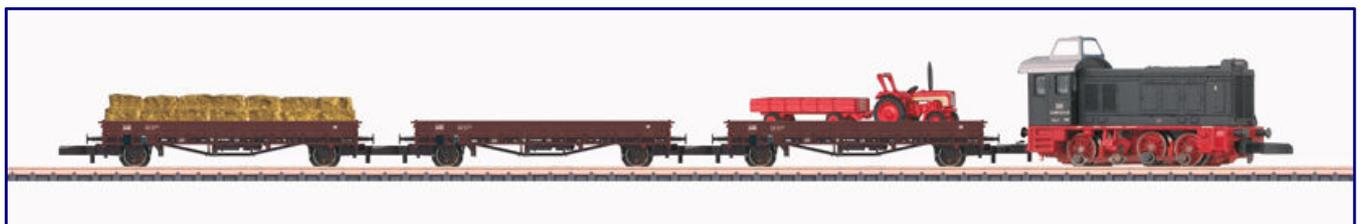
The new Rmms 33 stanchion cars are available for Era III with steel shelves and two stanchion types. These individually available cars appear without brakeman's platform with hay bales (Art. No. 82130; top picture) and without handbrake platform and cargo (82131, bottom picture). Photos: Märklin

It starts with the Rmms 33 stake car of the DB (82130) for epoch III. It is a specimen without handbrake, but with metal shelves and press plate stanchions. It is loaded with a hay bale insert.

It is accompanied by another Rmms 33 (82131), which, however, has a handbrake platform and also has optical differences due to its wooden shelves and stanchions. This model is delivered without a load insert.

In the epoch IV these vehicles are on the road as low side cars of the type Klm 441. Three of them, with metal shelves and without handbrake platforms, are included in the train package "Light goods train" (81772). A load of hay bales also is included in the package.

The scope of delivery also includes a new tractor with trailer, which can be used as a load or as an equipment detail. Both models are made of metal, have rubber tyres, and roll.



The package "Light freight train" (81772) for MHI also contains new shapes, but here as low side car Klm 441 of epoch IV. The model of the tractor with trailer is also complete; the V 36 with roof canopy is a variant of design. Photo: Märklin

This exclusive MHI package is rounded off by a class 236 diesel locomotive with a Nuremberg roof canopy. This is the first time that this type of locomotive has been offered as a variant of the popular locomotive.

The second MHI special series is the car display "Passenger Coaches" (87408), in which three identical DB, SNCF and SBB passenger coaches are individually packed. All models have different service numbers. For the Bundesbahn, ocean-blue ivory Bpmz 291 are available here.

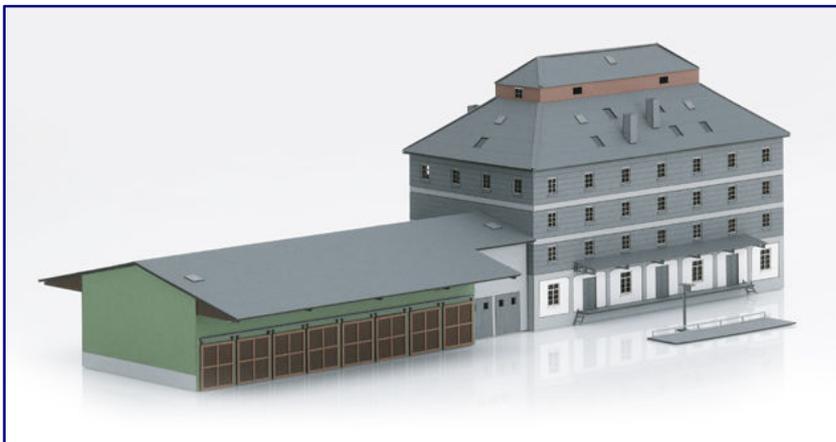


The two foreign cars are those of the Eurofima type. For Switzerland, they should replicate the Bcm-type couchettes in the state between 1979 and 1982, and for France, they are declassified A9s with a logo that differs from the models in the last display.

They are now in their 2nd class, but because of their origin they still carry the yellow stripe over the window band, as was the case with the model at that time.

Märklin would also like to consider the Zetties with two new laser-cut kits. The station "Eckartshausen-Ilshofen" (89703) is a representative of the more than 150 year old, former Württemberg standard station in sandstone construction.

Today it is a protected building and can be built as a kit as a reception building for Ilshofen.



We also find the Raiffeisen warehouse with market (89705) very interesting, to which we want to dedicate an article of our own. The model is also located in Eckartshausen near Crailsheim, immediately in front of the railway station, and originally had its own railway connection.

With the Eckartshausen-Ilshofen railway station (89703; photo above) and the Raiffeisen warehouse with market (89705; photo below), two new laser cutting kits are also entering the range. Photos: Märklin

The model has pre-marked separation points, thanks to which, either hillside positions or flat, height-reduced installation positions can be easily moved. Both buildings can also be erected individually. The kit thus serves an agricultural theme that is suitable for many systems, in a very flexible way.

## New Catalog 2019/2020 from Noch:

Just in time for the start of the season, accessory manufacturers are also presenting their main catalogue 2019/2020. The 355 pages do not contain new items, but traditionally all spring new items, which are usually available at the start of the handicrafts season, will be incorporated into the new edition in autumn.

And there were some areas to mention this year: realistic foils, new road construction colours as well as a completely revised model railway suitcase assortment. In the February 2018 issue, we presented all these hits to our readers.

The new Noch main catalogue 2019/2020 can be found in model railway shops, through the manufacturer's own website (<https://www.noch.de>), and in many bookstores.

## The OnTraXs! is history:

Anyone who was allowed to exhibit at OnTraXs! could feel honoured. Nobody could apply here, for this fair systems were selected, which from the point of view of the organizers of the Mitropa team belong to the best in the world and were also new.

But that's over now, as the organising railway museum in Utrecht also announces on its website in German: <https://www.spoorwegmuseum.nl/#!/evenementen/modeltrein-expo/on-traxs-english>.

The cooperation with the previous organizers was terminated, as we had already learned first-hand at the Intermodellbau in Dortmund. The exhibition has finally been renamed "Modeltrein Expo" and will again take place in the Netherlands from 15 to 17 March 2019. What is new is that 30 participants from the Netherlands, Belgium, Germany and England can register there themselves.

The character of this unique exhibition is likely to change enormously and the circle of participants will probably no longer be recognizable. What remains the same is that between the facilities there will be stands from suppliers and manufacturers where new products can be seen and individual items can be purchased.

For children, staircases will be set up so that they can better view what is happening on the layouts. They will also be addressed with hands-on activities and a shunting diploma.

## News from Micro-Trains in September:

Two further SD40-2 versions will be delivered by MTL this month. These are representatives of Norfolk Southern (Art.-No. 970 01 211 / -212) and Canadian Pacific (970 01 231 / -232) in two company number variants each.



In the "Heinz-Yellow-Series", the first of six models to appear is a covered freight car with advertising for a mustard of this brand (518 00 630). At the beginning of the 20th century, the models were on the rails of America.

The two 40-foot standard Chesapeake & Ohio freight cars with aluminium roofs from 1959 are also painted yellow. They are available separately (502 00 441 / -442) and carry various operating numbers.

Also on the way to dealers should be the factory aged 51-foot refrigerated cars for the Western Fruit Express with the company number WFEX 809 (548 44 040) as well as the factory aged 50-foot cars (510 44 015) with a one-piece loading door, which are painted with graffiti "Ozone Day". The latter model has a different design on both sides.



EMD SD40-2 der Canadian Pacific (Art.-Nr. 970 01 231; Bild oben) und der 51'-Kühlwagen des Western Fruit Express (548 44 040; Bild unten). Fotos: Micro-Trains Line

In Germany, MTL models can be purchased from Case-Hobbies (<http://case-hobbies.de>), among others.

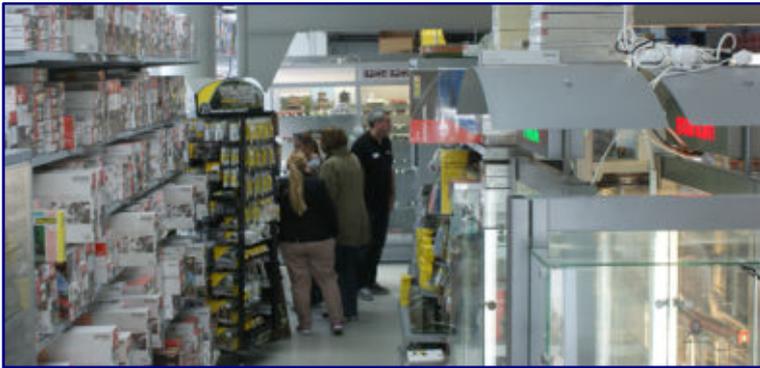
#### New advertising wagon of the 1zu220-Shop:

The 1zu220 shop (<https://www.1zu220-shop.de>) is continuing its beer trolley series commissioned by Märklin and presented a pastel yellow example according to RAL 1034 with the design "Westheimer Wildschütz" (Art.-No. 98162) at the beginning of the month. The roof is painted in RAL 9007 grey aluminium.

As with the predecessors of the series started in the spring, in which it is now the third one, is a thermal insulation car of the association type according to the drawings, A2 without brakeman's cab - a type very similar to the well-known G 10 with horizontal board cladding and external struts.

This model, too, is designed to be close to the factory and has Era IV operating codes, so that it can be used credibly on model railways as a private car operated by DB. 100 copies were ordered, after sorting out the rejects, Märklin had exactly 87 models for customers, which are now available for sale and will probably be sold out again quickly.





#### Shop opening at the Modellbahn-Union:

By the end of May, the Modellbahn-Union had already closed its shop in Dortmund's city centre. In spite of the good and thus expensive location in the city centre, the old shop did not prove to be optimal, because casual customers could hardly pass by in the small side street near the end of the main shopping street.

So a big move to nearby Kamen occurred, which required all of its efforts. On 1 September 2018 the time had finally come and the opening could be celebrated at the new location at Gutenbergstraße 3a, near the Kamen autobahn junction (district of Unna).

On an area of 500 m<sup>2</sup>, customers now have a large choice, a factory outlet, a warehouse, a large workshop area as well as training and seminar rooms.

Around 1,000 customers, company representatives and business partners took the opportunity to get a personal impression with beer and sausages from the grill.



For the start of the new shop of the Modellbahn-Union in Kamen ( photo above) there was also an in-house exhibition with numerous product demonstrations, for example by Noch by sales representative Clemens Mollenhauer ( photo below).

Those who wanted to conjure up their luck by drawing lots took part in the big raffle. Additionally, a large house fair took place, in which many manufacturers and others

participated. For Z gauge, Märklin, Busch, Doehler + Haass, Faller, Heki, Kibri/Viessmann and Noch can be mentioned here.

They all demonstrated their products, showed their application or mediated tricks for optimal results. Modellbahn-Union itself demonstrated how the in-house laser cutting kits are assembled into perfect buildings. So the afternoon flew by like clockwork.

#### New Lanz tractor at KoMi-Miniaturen:

Shortly after publishing the last issue we received the information that KoMi-Miniaturen (<http://www.komi-miniaturen.de>) has delivered its model of the Lanz Bulldog HR 8 "Ackerluft" had 55 HP, a first for the time. Both grey and blue basic colours are available.

This model expands the fleet of available agricultural equipment, which we covered in detail in September, by once popular and widespread types. The implementation quality and detailing is, as usual from this manufacturer, extremely high.



The Lanz Bulldog HR 8 "Ackerluft" by KoMi-Miniaturen also features the usual high level of design and paintwork of this small series manufacturer. Götz Guddas currently offers handmade lamp brackets for this vehicle and the Lanz caterpillar tractor from the same manufacturer. Photo: Götz Guddas

Interested parties should hurry to place an order, as the first edition is already out of stock. According to our information, a re-production is currently being prepared, but will probably be one-time and according to the order quantity received.

Götz Guddas made lamp brackets for this model and the similar caterpillar tractor from the same company and delivers them to customers on request. If you are interested, you can reach it via the Forum of Z-Freunde International e.V.

#### **Märklin deliveries in late summer:**

Deliveries at Märklin are a little more sparse, and with a view for Christmas business, they are sure to pick up speed again soon. This month only "Ludmilla" of class 232 (Art.-No. 88135) was delivered to the dealers.



Only the heavy diesel locomotive class 232 of Railion Deutschland (Art.-No. 88135) was delivered this month.

The heavy diesel locomotive in a traffic red colour is labelled for Railion Deutschland AG. From a technical point of view it corresponds in design and construction to the models of the series previously delivered, and on the roof it carries the high cooling fans of the modernized machines. The classic Märklin five-pole motor continues to work under the housing, as we had already announced in the report from the International Toy Fair.

**Road safety with HOS model railway technology:**

HOS Modellbahntechnik (<http://www.hos-modellbahntechnik.de>) has been a recognised specialist for road signs and signal boards for several years now, which are applied to etched metal parts with convincing sharpness using UV printing. This summer he has extended his street accessories with fine nickel silver crash barriers (Art.-No. LP 01).



The new crash barriers (Art.-No. LP 01) from HOS Modellbahntechnik secure Z-gauge country roads and can also be arranged in any order. The Unimog in the picture was made by Wespe Models and is exclusively available at the 1zu220-Shop.

The grey lacquered and profiled parts are each 18 cm long and have 11 posts. They can be arranged in any order and as required. We bent the end with a pair of pliers and repaired the paint with Revell 47 (matt). Now the fine securing part disappears into the ground at the road edge, angled appropriately for the model.

**An action for clean cities:**

To prevent cities from getting dirty on a scale of 1:220, Schrax (<http://www.schrax.com>) has now included the 1,100-litre plastic sliding lid containers introduced at the end of the 1960s in its range of new products.

Depending on the period of use, region and the waste separation introduced in the meantime, both black-grey and various coloured containers can be selected. Graduated prices accommodate bulk orders.

These mobile waste and recyclables containers (ABW) are the successors to hot-dip galvanised metal containers of the same format, which became superfluous when coal ovens were no longer used for heating. The models are open at the bottom and hollow inside. Rollers and lids do not function.

## The latest news from American Z Line:

The factory closure of the Chinese supplier communicated by AZL apparently takes its toll, as this supplier apparently reduces its delivery speed. There are only two new products to report this month.

The EMD SD75i of the BNSF in Warbonnet paint (Art.-No. 6105-1 to -3) is a re-release from 2006 based on the former cases. Technically, however, they were upgraded, because they run on the modern chassis with new bogies of the models of this type series delivered from 2014. Previously AZL had been asked several times for a re-release.



EMD SD75i der BNSF in Warbonnet-Lackierung (Art.-Nr. 6105-3). Foto: AZL / Ztrack

The 40-foot covered AAR freight wagons will run for New York Central in September and are available individually (904311-1), in pairs (904381-1) or quad packs (914311-1).

Further manufacturer photos of the current deliveries can be found at <http://www.americanzline.com>.

## Conrad's new model railway catalogue 2018/2019:

In 324 pages, Conrad Electronic (<https://www.conrad.de>) now presents its complete range for model railroading -- across all common track gauges and brands. Of course, Z gauge is also represented among the 1,100 innovations that are represented in this printed catalogue and are waiting to be discovered.

## Latest FR novelties and for starters 2019:

Around 1990, the Swedish State Railways (SJ) introduced a new colour scheme. The brown colour of the passenger coaches gave way to a blue-dark grey paint, with the new swinging logo. The previously orange locomotives were also adapted accordingly.

FR Freudenreich Feinwerktechnik has been supplying its 1960 Talsvagn models according to this colour concept since 14 September 2018. They are distributed three different products: A first wagon pack (Art. No. 46.220.32) consists of a 1st and a 2nd class wagon. A second pack expands the train by two units of the second class (46.221.32).



The Bistro coach (art. no. 46.220.31) is one of the Swedish passenger coaches of the current new items in the colour concept of the nineties. Photo: FR Freudenreich Precision Engineering

The corresponding Bistro/Bio trolley (46.220.31) with integrated cinema is available separately. As a model, it has a very elaborately designed interior. All models in this series are also available with Passmann interior lighting at an extra cost. They can be ordered from the supplier's website (<http://www.fr-model.com>).

This manufacturer is now announcing a big hit for delivery in the first quarter of 2019. For the first time, there will be an absolutely scale NOHAB diesel locomotive, which refers both to the housing forms and the chassis replica.



Delivery of a completely redesigned NOHAB diesel locomotive is scheduled to start in early 2019. It avoids the obvious mistakes of the Märklin model and can also be equipped with Velmo digital sound on request. Photo: FR Freudenreich Feinwerktechnik

In proven FR design, it will initially appear as a locomotive of the Erfurt Railway Service (49.125.01) and will be distributed exclusively via the 1zu220 shop. An analogue and a digital version will be offered, which will also be upgraded with operating sounds by Velmo.



The first Scandinavian version, which is available from Freudenreich itself, will also be offered at approximately the same time. This is a model based on the model by Railcare (46.125.01). The prices for both models should be identical and only depend on the equipment variant.



Further variants can certainly be expected, but at this point, no new models have been announced.

The first versions of the new locomotive to be announced were the EBS (49.125.01) in the DSB colour scheme (top picture), which is only available in the exclusive 1zu220 shop and operates in Germany, and the Railcare version (bottom picture), which is available from Freudenreich, for followers of Scandinavian trains. Photos: FR Freudenreich Feinwerktechnik

## Preparation for the handicraft season:

Spur-Z-Ladegut Küpper points out that its own product range is much larger than the name suggests. So this supplier is also a perfect partner to make your own rolling stock ready for the new season.

Here there are many spare parts and tools as well as other aids, but also finished accessories for your own building projects, which should begin soon again. For those who have a need, the products of the married couple Küpper can be found at: <https://spur-z-ladegut.de>.

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