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# Trainini

## German Magazine for Z Gauge

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for railroad enthusiasts
in the scale 1:220
and Prototype**

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## Pioneers in Auto Transport

## Layout Woodwork
## Final Part in Vinyl Film Construction

## Introduction


**Holger Späing**
**Editor-in-chief**

Dear Readers,

Here we are again, a little earlier than we have been used to in recent months. Despite a few unforeseen events, which meant that we sometimes had to move closer together and prioritise differently, we managed to get a lot done.

We were able to use the holiday time and relaxation for model building, as well as writing and taking photos to ensure that our construction projects make progress. One of these relates to our beginners' layouts, which are to be built over two years, meaning 24 issues.

Today, Dirk Kuhlmann is turning his attention to the sawing plans, and the woodwork, as these sections have an extremely important function as foundations. In the meantime, we look forward to the time when this layout will also make visible progress in its appearance.

A large part of this edition is taken up by the Bundesbahn's double-decker carriages. Their origins go back to the 1930s, but their heyday did not begin until 1953.

However, we are not only looking at the Off 52, which was delivered as a model by Märklin and now must undergo a comparative test with its predecessor but are travelling further along the timeline into the nineties.

We also take a look at the Offs 59, which Bahls Modelleisenbahnen announced as a model a few years ago and which should therefore not be missed. The further development of this wagon type shows that there are still a lot of possibilities in this theme. There is still potential for future innovations, which would certainly be good for variety on our layouts. After all, these wagons were mostly travelling as long block trains, which only offer visible variation through the mixing of construction types.

Our reader Reinder Rutgers also used his time on holiday. He has been busy for his part 3 on vinyl sheet building construction, and has also created a new demonstration diorama to encourage you to rebuild and imitate.

We are not the only ones impressed by his results! It also makes it very clear how important it is to go outside and study the prototypes and templates, a credo that we always want to pass on. After all, the layout should always be coherent and credible. The still ongoing summer offers the best options for model excursions.

But that's not all: this edition has also featured new announcements and deliveries. The number of letters to the editor is a little low during the holiday period, but we would like to thank you for the photos and articles that have reached us, literally, from all over the world in the last few weeks and are now to be included in our edition planning.

Keep up the good work! **Trainini®** also thrives on exchange and participation.

Sin-Z-erely,

Holger Späing

Trainini® International Edition
German Magazine for Z Gauge



## Editorial



## Model



## Prototype



## Design



## Technology



## Literature (not translated - only in German)



## News



Wir thank Reinder Rutgers for his contribution as well as Eisenbahnstiftung, Armin Schwarz and Stefan Carstens for their photo support.

Date of publication of the German language version of this issue: 29 August 2024

**Cover photo:**
**The year is 1954 and auto transport by rail is rapidly gaining momentum in the German economic miracle. The Bundesbahn has just put 300 Off 52 double-decker units into service as an interim solution, some of which we see here being towed by 50 1301 on its way to the Volkswagen plant in Wolfsburg.**

Märklin‘s new Off 52

# Pioneers in Auto Transport

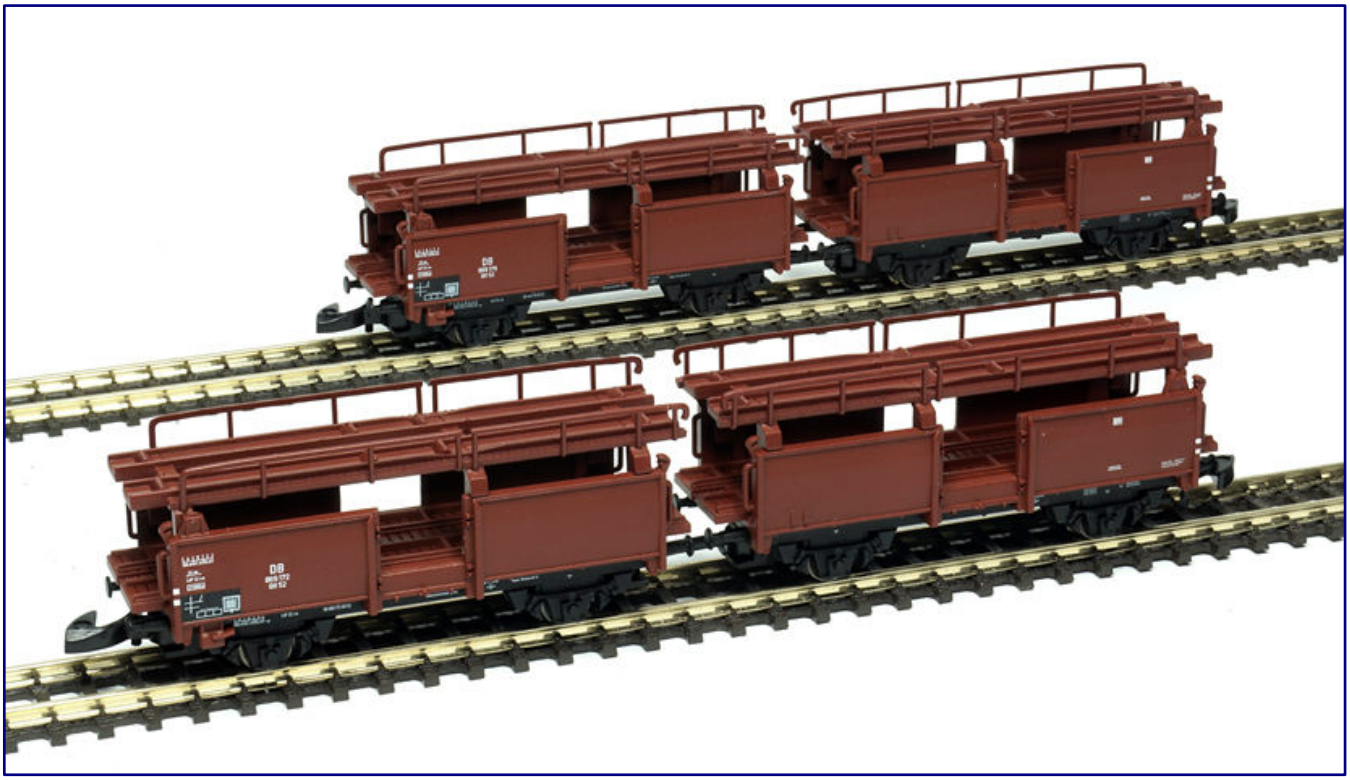
***The Off 52 double-decker car transport wagon did not have its first appearance as a Z gauge model until 1999, although the basic model had been in the Mini-Club range since the beginning. However, both models, which were clearly too long, were no longer up to date, which is why, after the true-to-scale Omm 52 model, the wagon derived from it for transporting cars was only a matter of time.***

The time has finally come in the last few weeks: Märklin has delivered its new Off 52 double-decker auto transport wagon (item no. 86235). A predecessor had already appeared for the first time in 1999, which was met with excitement at the time because it was a type of car that had previously been sorely missed

It did not appear in the catalogue for a long time, which was certainly since it had simply become antiquated. After all, this model was based on a standard chassis and body from 1972, and the result was a car that was clearly too long and whose design between the axles was equally inconsistent.

**The wheels keep rolling in the German economic miracle, because the assembly lines in the factories never stand still. Even the class 58 steam locomotive is far from ready to leave and takes an empty set of the brand new Off 52 back to the car factory at night.**

When Märklin redesigned the type Omm 52 open freight car in the correct scale length a few years ago, a contemporary car transport car that could be based on it like its prototype also seemed to be in the cards.



**The newly delivered wagon set (item no. 86235) contains two pairs of Off 52 car transport wagons that have not yet been loaded at the factory.**

Now the time has come, and we are taking this as an opportunity not only to present the new design, but also to deliberately compare it with its predecessor. After all, we want to know whether this model is indeed better than its predecessor in all respects. After all, many Zetties are likely to have this wagon in their inventory several times, and may, therefore, be hesitant to immediately buy the new model.

So, let's start our review with an important observation: combining the earlier model 86221 (and its derivatives) with the new 2024 mould does not seem to make sense to us. The different lengths of the models are too obvious and make it clear from any viewing distance that something cannot be right here. And these are not the only differences.

Whereas the earlier models were still two separate cars with standard couplers in between, Märklin has decided this time to couple them firmly and close in the middle. As with the prototype, they can now only be used as a double unit. This is completely consistent with the prototype, because both Omm 52 units, which have been combined, share the same car number, both large and small.

This also explains why 600 open wagons were required to obtain 300 double-decker car transport wagons. The new models can be found in pairs in this pack and bear the road numbers 860 152 and 860 172, so they date from the middle of the rebuilding period. This will become important again in a moment.

First impressions are always important. And this tells us that we are dealing with a coherent model. Whereas the length, which is clearly too long for an expert railway modeller, was immediately noticeable in the past, here it is the case in a positive sense and our eyes are captivated. In direct comparison, however, the brown loading platform seems unusual to us, as it was always sprayed black on the predecessor.

We are familiar with deep black on freight wagons from the running gear and add-on parts such as grab handles, so we are probably familiar with this. Has Märklin taken a cost-cutting measure here or simply made a mistake? No, is our judgement. It is more likely that the predecessor was incorrect in this respect and that customer expectations were probably only being met, as the 1:87 scale models also had black superstructures for a long time.

**A comparison of the new model (front) with its predecessor 86221 (rear) clearly shows that the models are different lengths and also appear to be less compatible in other respects. The red-brown loading platform of the current model is correct.**

Historical black and white photos can only help to a limited extent here, as the wagons on them usually still have a slightly different appearance because they are advertising photos from the launch of operations. But, even on these, the black chassis stands out from the red-brown body, but not the loading platform from the side walls.

The Bundesbahn's labelling specifications clearly stipulated RAL 8012 red-brown for the upper deck as well, as this was part of the superstructure, and not an add-on part. Later, as a cost-saving measure, the black colouring of such parts was completely omitted anyway, but this cannot serve as a justification here.

## The external characteristics

The reproduced operating condition corresponds to the condition existing from the middle of 1954. At that time, these wagons were completely new, and procurement was still ongoing for several months or had only just been completed. The revision inscriptions printed on the black frame date the models to the year 1960, but the reproduced state of construction also corresponds to the outlined time frame.

This includes above all a railing on the upper deck, which the predecessor also had, but which cannot be seen in many of the original photographs. This was only installed in 1954 based on initial operating experience or was soon retrofitted to the units already in service (see prototype article). As it was permanently attached to the superstructure, it is not an add-on part in the sense of the painting specifications.

**A direct comparison shows the greater detailing of the new model, but also the material thickness of the moulded parts, which make some parts look a little too large.**

The planks in the upper deck recesses and the plank floor structure of the lower loading level are well recognisable. The predecessor had only plain surfaces in these places.

When looking at the lower deck, however, we are apparently also looking at recesses where the prototype had none. The predecessor model only had one inner rail per wheel side of the motor vehicle, which served to provide better guidance. So, what is correct?

It is undisputed that model cars must have a secure hold on the transport wagons in both levels. This applies both in the longitudinal direction of the wagons and in relation to the transverse axis. When compared with prototype documentation, it becomes clear that the reproductions of the novelty are locking rails that were retrofitted on both loading levels.

They accommodated the levers of the so-called shell wheel chocks, which secured each vehicle against rolling on both wheels of the rear axle. These chocks, which replaced early wooden wedges that had to be nailed down, were reproduced by Märklin then, as now, quite simply as upright triangles.

Visually, the recesses of the loading platform, between which there is a correct view downwards, as well as the lower loading area with its protrusions on both sides look quite thick. A comparison of the 86221 and 86235 models reveals various reasons for this: On the one hand, ‘black makes you slim’ applies; the new model has no such camouflage.

On the other hand, the more meticulous detailing is also a reason for this, as the required material thicknesses are merciless here. There are probably equally strong arguments in favour of both solutions.

However, the new Omm 52, which served as the base model as in the prototype, also has a weakness highlighting this area: the wagon floor is unmistakably too high due to the required weight insert, which is now very obvious due to the lack of side doors.

**Dimensions and data for the Off 52 of the Deutsche Bundesbahn:**

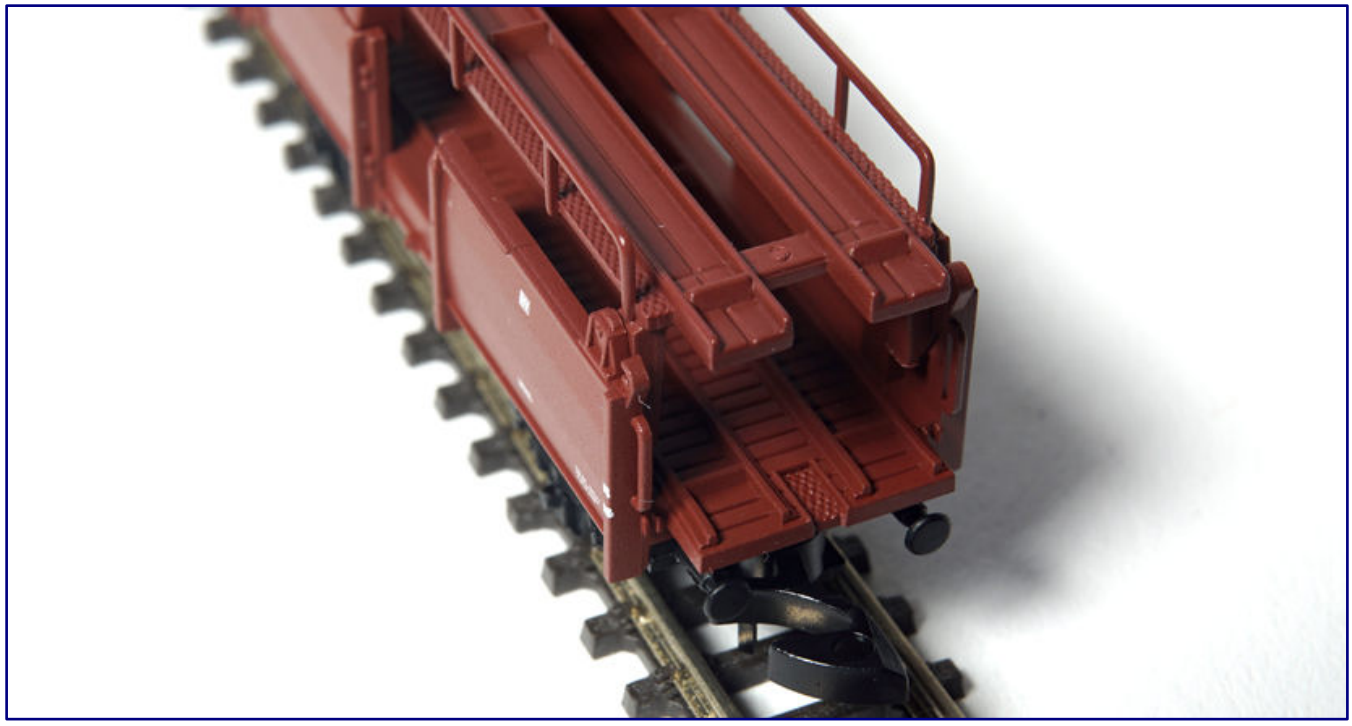
| | Prototype | 1:220 | Model | Variance |
|---|---|---|---|---|
| Length over buffers (LüP) | 22.120 mm | 100,5 mm | 93,6 mm | - 6,9 % |
| Overall width | 3.074 mm | 14,0 mm | 14,4 mm | + 2,9 % |
| Height above SO (rail head)* | 3.670 mm | 16,7 mm | 19,1 mm | + 14,4 % |
| Loading length top / bottom | 21.320 mm | 96,9 mm | 92,0 mm | - 5,1 % |
| Floor height above SO | 1.245 mm | 5,7 mm | 7,5 mm | + 31,6 % |
| Loading height bottom | 1.680 mm | 7,6 mm | 7,5 mm | - 1,3 % |
| Total centre distance | 16.460 mm | 74,8 mm | 72,4 mm | - 3,2 % |
| Wheelbase of the wagon half | 5.400 mm | 24,5 mm | 24,6 mm | + 0,4 % |
| Distance 2nd to 3rd axles | 5.660 mm | 25,7 mm | 22,8 mm | - 11,3 % |
| Wheel diameter | 1.000 mm | 4,5 mm | 4,4 mm | - 2,2 % |
| Dead weight | 25.300 kg* | --- | 10,7 g | |
| Maximum permitted speed | 80 km/h | | | |
| Years built | 1953/54** | | | |
| Quantity produced | 300 | | | |

* Dimensions for retrofitted railing on upper deck
** Conversion from Omm 52, dismantled until 1967

The dimensions table confirms the biggest outlier here, which is also reflected to a lesser extent in the overall height. The loading height of the lower level, on the other hand, is only slightly too low.

A definite strength of the new model, however, are the many details on the superstructure, where Märklin has worked very conscientiously. In contrast to the historical model, we now also find the replica of the cable pull system, with which two thirds of the loading platform could be cranked down.

The bend in the upper section is also easily recognisable in the railing as well as in the recessed area. Together with the correct three-point mounting, this gives the model a harmonious appearance. We would also like to pay tribute to the detached moulded handles on the outside of the side walls and the remaining hook fasteners on the removed end walls. Neither of these could be found in the past.



**The top view shows the wooden covering of the wagon floor and the recesses of the loading platform, each with locking rails and wheel chocks.**

## Dimensions and colours

The chassis of the Off 52 (and some other goods wagons with the same wheelbase) is unfortunately not one of the most detailed in Märklin's portfolio. The entirety of eight-leaf spring assemblies, barely recognisable hooks and axle bearings, appears far less filigree than with other implementations. The brake system levers are missing, as are all four shunter steps on the prototype vehicle halves.


**The bend in the loading platform is easily visible on both halves of the wagon, while the running gear cannot keep up with such details: The brake system levers and shunter steps are completely missing, which is why it looks strangely empty.**

While the earlier Off-52 model was clearly too long, the new one is now about one metre too short per wagon unit. Due to the buffer distance, some of this is compensated for when measuring and we must also recognise that Märklin has dealt with this point well.

The loading platform and ramp plates have also been adjusted in line with the dimensional deviation, resulting in a harmonious overall appearance. The reason for the deviation is a special feature of the prototype: To achieve the maximum loading length, unitised front ends were attached to both sides of the wagon halves.


**Details such as the detached handlebars and the latches for the front flaps on the superstructure are impressive, although they are a little oversized in the front view (see photo on page 8). The reproduction of the cable pull system for cranking down the loading platform ramp as well as the paintwork and printing deserve praise. The hinges of the removed side doors have not been omitted either.**

The chassis base in the kit only has the version without and with a front end, as was otherwise usual. We also consider the tooling costs for an additional mould that cannot be used for other purposes to be uneconomical.

In any other case, a new problem would have become apparent, because the prototypes could load five VW Beetles standing close together on each loading level, with the centre one resting on each of two halves of the vehicle. In the model, this is almost impossible or at least proves to be very restrictive. The model will therefore only have eight small cars, which will not clearly indicate the difference from the original, thanks to the excessive spacing.

Incidentally, the new wagons appear to be equipped with close couplers because, in accordance with the prototype, the metal sheets almost reach the buffer discs and this appears to shorten the distance between the wagons, at least visually.

**The wagon halves are firmly and closely coupled on the inside. The two loading platforms and ramp plates are very close together.**

A final advantage of the new model is the pleasantly matt and clean paintwork in the colour RAL 8012 red-brown, which contrasts slightly with the deep black chassis (RAL 9005). The white lettering on it is true to size and almost completely readable with a magnifying glass. They are also correct and complete in terms of content.

In direct comparison to the predecessor model 86221, it is noticeable that the inclusion of the frame support in the service markings is not only prototypically correct but is also quite perceptible. It also emphasises the harmonious overall appearance of the car transporter.

## Use and outlook

It is always the wish of our readers to include prototypical suggestions for the formation of trains in the test reports. In the case of the double-decker car transport wagons, a block train is of course a good idea, which in the prototype could comprise up to 25 wagon units, especially when travelling for Volkswagen.

However, if we disregard the prototypes without a subsequent series, the Off 52 was more of an ‘exotic’ rail car that could be used until 1967, at the latest. Shortly after it entered service, it was supplemented by the Offs 55, which Bahls Modelleisenbahnen had been offering for years, and which would harmonise very well with these models.

The Offs 59 was created as a supplement and further provisional version, which achieved many times the number of units, and was in service for more than two decades. This should, therefore, actually form the majority of coaches in block trains. Theoretically, it could be realised based on the Omm 55 from FR Freudenreich Feinwerktechnik. This should illustrate how much at least a second design would be needed on the market.

**All in all, the new Off 52 has become a successful freight car, but it will not take the top position within the Märklin programme.**

As this is not the case, we are providing a further suggestion for use: Especially in the early days of the new class, groups of wagons were also to be found in mixed goods trains. This also opens up options for the use of empty wagons to be returned, but loaded units also appeared in groups at the beginning of the economic miracle.

In this case, the smaller number of wagons could also be explained by another car brand, which had less market share in the period shown. Incidentally, suitable loads are already being prepared and constructed by MrZtraX (VW Beetle under tarpaulin) and Modellbahn-Union (Opel under tarpaulin) – we will report on this separately. By the way, Off 52 were not used in motorail trains and in Sylt traffic.

Finally, let's summarise our impressions once again: The paintwork and printing are also among Märklin's recognised strengths here. The detailing of the superstructure is good, and we will accept the weaknesses of the running gear. Although the deviation in length has been well concealed and a harmonious overall appearance has been achieved by maintaining the most important proportions, the partially large material thickness together with the high floor level remains a noticeable weak point.

**This type of wagon construction achieves its best effect in block trains, as can be seen here: The empty double-decker carriages are in tow with a heavy class 50 freight steam locomotive. The goods train accompanying coach, which runs directly behind the locomotive, was still indispensable at that time.**

However, this should not be too noticeable in a train formation, especially in a block train, because a single wagon unit really becomes blurred. We are therefore convinced by the novelty and nominate it for the new releases of the year 2024 in the wagon category.

**Manufacturer of the basic model:**
https://www.maerklin.de

märklin

Zinkdruckguss

Gussnachbearbeitung

Kunststoffverarbeitung

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Einlass ins Werk von 9.00 - 15.00 Uhr.
Buspendelverkehr zwischen 8.30 - 18.30 Uhr
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## 13. und 14. September 2024
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The Off 52 and its successors

# From a provisional Solution to special Wagon

***Soon after the Second World War, the automobile finally began its victory parade. From then on, it developed into a means of mass transport, with increasing individual transport threatening the railway from several sides at once. One of these was the transport of newly built cars to the far reaches of Germany or to export ports. The Bundesbahn had to find quick answers, one of which was the Off 52 car transporter.***

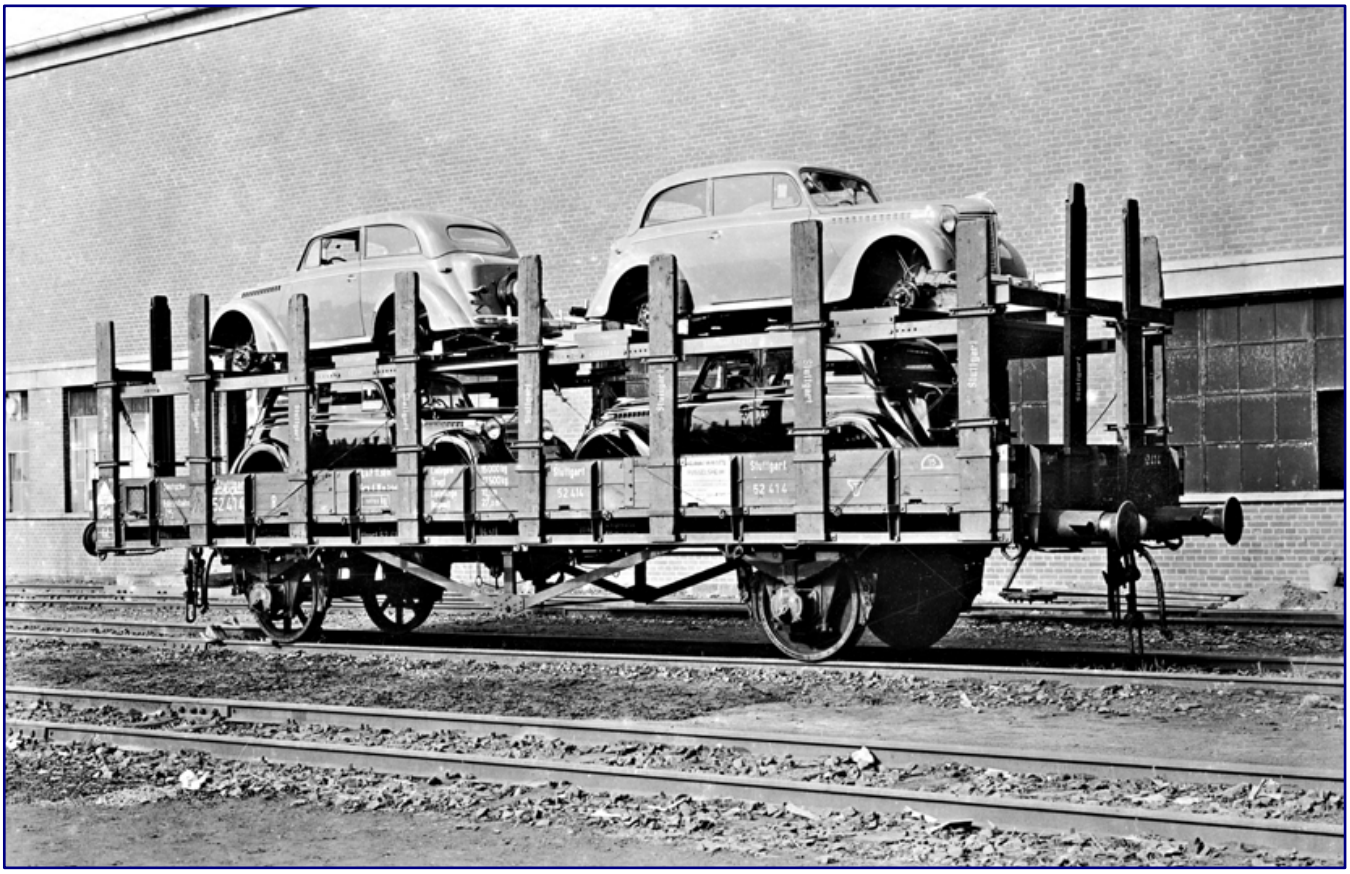
Double-decker wagons for car transport were a child of the Bundesbahn, stated former DB employee Gerd Wolff in 1991 in the EK-freight wagon encyclopaedia DB. He perhaps deliberately ignored the fact that the Deutsche Reichsbahn in the DDR also used comparable special wagons.

**The mass transport of cars by rail is a phenomenon of the post-war period: on 24 September 1977, 043 606-3 (Bw Emden) is on its way near Haren with an empty car transport train. This locomotive was taken out of service on just 1 October 1977 and retired with all the other locomotives on 27 October, the day after the end of steam on the DB. Photo: Johannes Glöckner, Sammlung Eisenbahnstiftung**

However, we are not focussing on these wagons today, as it is true to say that the wagons under consideration with the UIC class mark L have become much more important in the west of Germany. A brief historical outline should therefore explain the need for such wagons and their technical development.

Although cars were already being produced in increasing numbers at the end of the 1920s and the KdF car was intended to be manufactured for the masses, there were no special carriages for transport from the factories before the Second World War.

The route from the manufacturer to the buyer did not involve the railway. The only exceptions were vehicles that were intended for export and had to be brought to the quay of a seaport, for example.



**As can be seen in this photo, car transport on the R Stuttgart 52414 stake wagon with loading frames was presented to the public in 1940. The wheels of the Opel Kadett, which were built in Rüsselsheim from 1936 to mid-1940, still had to be removed for the journey. Photo: RVM, Sammlung Eisenbahnstiftung**

In that case, this was done either with flat wagons or large-area covered goods wagons, which then had wide-opening front doors. We remember designs of the Dresden type or the later Bromberg. The vehicles were secured on or in the wagon with wedges and ropes.

The need for transport increased dramatically after the outbreak of war. The rapid advance of German troops also meant that transport routes became longer. The Kdf cars (630 units), Commander cars (4 units), floating cars (approx. 14,000 units) and Kubelwagen cars (approx. 51,000 units) together made up a lot of units. The Reichsbahn remembered special transport racks for two-storey loading and modified them for the transport of Wehrmacht vehicles.

Whereas the metal frames had previously been connected to the stakes by lugs, they now stood freely on the loading area of an R wagon, but the stakes retained their protective function and remained inserted. Open freight wagons of the standard design (type designation O) were also used in two different ways.

**continued on page 18**



**In 1941, the R Stuttgart 9928 stake wagon with a newer loading frame served as an improvised car transport wagon for three Kubelwagen cars and a light passenger car of the VW 82E type, which was only produced in quantities of less than 1,000 and combined the body of the KdF car with the chassis of the type 82 (photo above). In 1944, the Wehrmacht and Reichsbahn were already a little further ahead: based on a patent from the previous year, the open Ommu Klagenfurt 4971 wagon already had a loading platform on top, into which a ramp could be hooked in when the end walls were removed (photo below). A Volkswagen type 166 (floating car) and a commander's car type 87 with all-wheel drive are driven onto this makeshift car transport wagon. Both photos: RVM, Sammlung Eisenbahnstiftung**

The first to be mentioned in this context consisted of cross members that were placed on the top chord at the centre distance of the loaded vehicles. The common feature of transport on wagons of the R and O types up to this point is that the cars had to be lifted into both levels using a crane.

Based on a patent from 1943, a better alternative was finally available for the O-wagons, as historical photos from 1944 show. The wartime model Klagenfurt is shown there with the front doors raised. Thick wooden planks the width of the car track can be seen between the wagon floors of two neighbouring wagons.

A loading frame can be seen on the upper chord, which consists of two longitudinal recesses, each of which engages in a strong round tube at the ends. These tubes rest on the top chord of the wagon as cross members. Above the doors, two underlaid U-profiles take up additional weight. At one end of the wagon, two further recesses are suspended in the round tube, which serve as access ramps.

This made it possible for the cars to drive onto the wagon independently, enabling faster loading and unloading. The idea for the Bundesbahn's post-war designs was born.

**Many cars still start their first journey by rail today, usually in block trains. In 1958, car transports could also still be seen in mixed goods trains, such as these brand-new Daimler-Benz 220 and 220S (W 180 series) on the Main-Neckarbahn near Frankfurt-Louisa. There was a shortage of double-decker car transporters in those years. Photo: Reinhold Palm, Sammlung Eisenbahnstiftung**

Consequences of the economic miracle

Thanks to aid from the Marshall Plan, the Federal Republic of Germany quickly got back on its feet from 1949. While the number of vehicles built in Germany in 1945 was only around 1,300, it increased dramatically after the Federal Republic of Germany was founded.

Despite the American lead, mass motorisation had already begun there before the war, and the undestroyed production capacities of other manufacturers, particularly in Asia, Germany became the third largest car producer in the world in just five years. Total production totalled 560,000 vehicles, and Volkswagen celebrated the 600,000th car built in the same year!

VW was the first, largest, and even to this day, the most important railway customer for the transport of new vehicles by rail. The rapidly growing company presented the Bundesbahn with new challenges, as transport on stake wagons, flat wagons and track wagons had finally reached its limits.

The car manufacturers, who were now producing on assembly lines and were dependent on fast transport, demanded fast loading and unloading, with the vehicles being able to drive up and down over head ramps under their own power. The local conditions in the factories always had to be considered. All wagons also had to be able to reach their destination wagon from the ramp without having to manoeuvre, which required drive-over options.

**Factory locomotive 3 of Adam Opel AG pulls a line of Off-52 wagons loaded with Opel Olympia Rekord from the Rüsselsheim factory halls in 1954. Photo: Sammlung Stefan Carstens**

As early as 1949, a car wholesaler had semitrailer lorries built that could transport up to seven cars on two loading levels on the road and bring them quickly to the customer. This was a warning signal for DB if it did not want to lose touch.

A special wagon was therefore needed, but there was not enough time for new development: quick solutions had to be found. Under this pressure, the Bundesbahn decided in favour of a provisional solution, in particular as it was not yet clear what share it would have in car transport in the long term.

To better utilise the load limits of conventional freight wagons, it was advisable to transport cars on two loading levels. This probably brought the open freight wagons with their loading frames back into focus. Two or even three-story loading had also long been familiar from the USA.

Without further ado, the DB had 600 units diverted from the new Omm 52 construction programme in order to derive 300 Off 52 double units (later designated Laae 540). At the time of the decision, they were the only open wagons of the standard design that already met the UIC specifications. This was an important prerequisite for use in neighbouring countries.

**The Off 52 double units were unmistakably derived from the Omm 52 open goods wagon and could therefore be recognised as a provisional solution, which, however, performed perfectly well and was accepted by the car manufacturers. Photo: Dr. Rudo von Cosel | © Stefan Carstens**

Each double unit counted as one wagon and therefore only always had one common wagon number. This could exclusively be found on the left-hand outer wall of the left-hand half of the carriage. This explains why only 300 Off 52s were (seemingly) converted from 600 Omm 52s.

The end doors were removed again, but this time the side doors were also removed. Instead of liftable loading frames, however, a fixed upper deck was now provided for each half of the wagon, two thirds of which could be lowered on the outer wagon ends using a cable winch. It was developed by the BZA Minden.

The Josef Graaff wagon factory in Elze (Lower Saxony) was and remained closely involved in the development and construction of car transport wagons. This was to continue until the latest new developments for DB in the 1980s.

Only on the upper level were the cars guided and laterally secured in two recesses each, which were fitted with wooden inserts. This loading platform had three cross beams and rested with these on the top chord of the wagons. The lower loading level was covered with wooden decking.

To bridge the joints and drive over the two halves of the wagon or onto the next unit, there were four unmounted recess ramps, which were stored into hooks on the inside of the side walls and thus stowed away when not in use. They were not allowed to remain fitted during the journey.

**In 1953, the DB presented the loading options of the new Off 52 at the loading ramp in Minden using the double wagon 869 002. In addition to the cranked-down loading platform ramps, the suspended recess ramps are also clearly visible. In this early state of construction, the wagon does not yet have railings, non-slip walking galleries next to the loading platforms on the upper deck and no locking rails, as can be seen very clearly below. Photo: Bustorff, Sammlung Eisenbahnstiftung**

During loading operations, they were hooked onto the support recess ramps of both wagon sections on the upper deck and supported on the carriageways on the lower deck. For the loading process, the movable loading platform section was lowered by 10˚ and special recess ramps were attached, which spanned the path from the head ramp to the loading platform.

Two wagon halves were firmly connected to each other via a four-link coupling under low pre-tension. To increase the loading length, both halves of a unit were fitted with a front end on both ends, the length of which corresponded to the length of the unit brakeman's stand.

The upper loading platform could carry up to 4 tonnes, the lower level even 16 tonnes. This resulted in a maximum load weight of 20 tonnes, which could not even to some extent be utilised, although the basic wagons were even designed for a load capacity of 30 tonnes. Incidentally, protective railings were not provided for the upper deck.

The loading length of 21.32 metres allowed five VW Beetles to be loaded at the top and bottom, with the middle vehicle front and rear standing on neighbouring halves of the wagon. Larger cars were transported eight to a unit. Volkswagen accounted for around 80 % of passenger car transports by rail.

Air brakes of the Hik-G and KE-G types were used, equipped with a control valve for two-stage mechanical load braking. As even loaded units did not reach the brake changeover weight, the load change remained fixed in the ‘empty’ position.

A test unit of these new car transport wagons was ready from April 1953 and was used for demonstration and test runs. As early as December 1953, series production rebuilds began at Graaf Elze (150 units), the Westdeutsche Waggonfabrik in Düsseldorf and Linke-Hofmann-Busch in Salzgitter (together another 150 units). The programme was completed in March 1954.

## Further developments

The carriages proved themselves well in operational use and are likely to have provided valuable insights for their successors. As car production continued to grow very rapidly, the capacity of the 300 Off-52 units was not sufficient in the long term; the history of the car transport wagons only began to gather pace with a development order from the Bundesbahn to Graaff Elze in 1954.

**This photo of an Off 52 double unit supposedly dates back to 1960. The railings on the loading platform have long since been retrofitted, but strangely enough there is no sign of the locking rails for fixing the shell wheel chocks in the lower deck. Photo: Bustorff, Sammlung Eisenbahnstiftung.**

But first, the existing units had to be optimised. First and foremost, this concerned occupational safety, as the risk of falling for the loading drivers was too high on the upper level: they were not secured either between the recesses or to the sides. Railings were therefore fitted to the last units before they left the factory.

From May 1954, the carriages already in service were also retrofitted for safety reasons. Their railings were made of steel tubes and were sufficiently stable to provide adequate protection for workers on the upper level.

Another improvement measure concerned load securing. Wooden wedges nailed to the wooden floor and additional lashing of the vehicles proved to be too time-consuming. Some car manufacturers therefore used so-called spike wedges: Wheel by wheel was then lifted, a special rack was slid underneath, and the car was lowered again.


**A curiosity in passing: at that time, cars were transported with the ignition key inserted. However, only vehicles from major customers, such as the Deutsche Bundespost in this case, were already registered. These VW transporters of the T 2 generation arrived at Frankfurt (Main) main goods station on a Laes 547 in 1971. Photo: Reinhold Palm, Sammlung Eisenbahnstiftung**

The wheel then rested on the rack but had no contact with the flooring itself and pressed spikes into the wooden floor on the underside with the weight of the wagon. The spike wedges did not save the freight from being lashed or chained down.

A solution was found in the form of the so-called shell wheel chocks. This fixing device consisted of two perforated locking rails on each lane, which were attached along the entire length of the load. Two swivelling wheel chocks were pushed onto a car wheel (from the front and rear) and fixed in the locking rails with a crossbar fitted with pins.

Attaching these chucks was much quicker and lashing was also no longer necessary. It was even sufficient to only secure the two rear wheels of each vehicle in this way. From 1954, ten sets (consisting of four pieces each) were supplied with each vehicle – enough for a fully loaded Off 52.

A curiosity in passing: when the cars were driven onto the transport wagons, the ignition keys were left in the ignition and the vehicle doors were left unlocked. The hubcaps were also often fitted in the factories in the fifties and sixties, as historical photographs show. It was only afterwards that it became common to place them in the car to protect them.

As is still the case today, new cars are first registered by the dealer or buyer. Licence plates are therefore not visible on the cars. One exception was the German Federal Post Office, possibly also other major customers. If car transport wagons are uniformly loaded with yellow cars, we regularly discover number plates; this can now also be explained with this knowledge and a transport of used cars can therefore be ruled out.

At this point, let's return to the development order placed with the Josef Graaff wagon factory in Elze: the DB's specifications were for a special two-part double-decker wagon that was only to run on three axles due to its low load weight. Production of the Offs 55 began as early as 1955.

**These Opel Kadett Bs, intended for export, were built at the Bochum plant from 1965 to 1973 and are travelling on Offs 59 near Bramstedt in September 1965. At the time the photo was taken, the Off 52, also designed as a provisional solution, was already on its way back. Photo: J.B. Snell, Sammlung Eisenbahnstiftung**

However, because the required quantities could not be produced in the short time in which the Bundesbahn needed these carriages, it resorted to another provisional solution. From the conversion

programme for the class Omm 55 open carriages, which had been running since 1956, it now also diverted quantities from the stock as well as the running production.

Between 1956 and 1959, a total of 938 units were built in a similar way to the Off 52 and further 599 units in 1963/64 (total number of units: 1,537), which also had no hand brakes and were designated Offs 59.

As the operational data for loading and securing the cars was identical to the Off 52, both types could be easily combined in trains. The ramp recesses on each wagon were also designed in such a way that the Off 52 and Offs 59, as well as the Offs 55, could be used together and were often seen together.

However, this was only the case for a very short time. The large number of Offs 59 units meant that the Off 52, which was not a high-speed wagon and only allowed to travel at 80 km/h, quickly became obsolete. In addition, a further design was required to close a gap, which we will come to in a moment in the generation sequence.

As early as 1960, barely six years after the first transports, the conversion of Off 52 into open freight wagons began. Only a very small number were given the UIC-compliant designation Laae 540, as by the end of 1966 the fleet had already shrunk to 122 units. In the following year, the last of these wagons were also converted and the pioneer was finally history.

**052 978-4 is on its way to Braunschweig with an empty car transport train near Hämelerwald on 21 March 1975. Photo: Dr. Uwe Knoblauch, Sammlung Eisenbahnstiftung**

## Generation sequence of the L-cars

The development of car transport wagons at DB lasted until around 1980, and this generation of units continued to be produced until 1991, when a landmark decision was taken to end the chapter at the Bundesbahn.

After the competitive conditions had become even tougher, more and more flexibility was required, and distribution logistics became increasingly complex, the future of car transport by rail only seemed compatible with the framework conditions of a private company: in 1990, IVG, Transwaggon, and VTG founded ATG Autotransportlogistic GmbH, which commenced operations on 1 July 1991.

While retaining its ownership status, the Bundesbahn contributed its wagon fleet, which from then on was registered as private wagons. Procurement policy was now also in the hands of ATG. The only exceptions were the ARZ wagons (“car in passenger train transport”).

The car transport wagons in industrial transport were scheduled and managed by ATG. It was not until 2011 that ATG became DB Schenker Rail Automotive, and as a result the wagons that still exist and have since been newly built also became ‘genuine’ DB AG freight wagons.


**150 055-2 from Stuttgart depot is travelling between Kleinvillars and Ölbronn with its car transport train in April 1984. Photo: Heiko Hamm, Sammlung Eisenbahnstiftung**

The author Gerd Wolff, mentioned at the beginning of this article, divides the development history of the Bundesbahn car transporters, including the types derived from them for ARZ transport, into five generations:

1. 1st generation 1953/59 (Off 52 & Offs 59)
   Two-part double-decker units, each consisting of two short-coupled open wagons of standard design without end flaps and side doors; loading platform mounted on the upper chord, divided and can be partially lowered on one side (access ramps required); load securing with shell wheel chocks.

2. Generation 1955/59 (Offs 55 & conversions)
   Two-part double-decker units with three-wheel sets; loading platform rests on six side columns, is divided and can be partially lowered on one side (access ramps required); load securing with shell wheel chocks; lower level now also equipped with wheel recesses

3. Generation 1958/64 (Offs 60 & Small series / prototypes)
   Two-part double-decker units with three-wheel sets and lower loading level; loading platform rests on six side columns, is divided and can be partially lowered on one side (access ramps required); load securing with shell wheel chocks; lower level also with wheel recesses

4. Generation 1964/73 (Laes 547 & small series)
   Two-part double-decker units with three-wheel sets and undivided loading platform, which can be lowered completely or on one side; load securing with monorail wheel chocks; lower level with wheel recesses

5. Generation 1980 (Laaeks 553)
   Two-part double-decker units with four wheel sets and undivided loading platform resting on four side columns (outer columns with inclined struts); load securing with monorail wheel chocks; lower level with wheel recesses

**A brief look at the car transport to Westerland in August 1969 near Morsum: A nine-part 'Westerland unit' consists of two end wagons, which correspond to the Laes 547, and seven centre wagons. They replace the previously used two-car Laes 543. Photo: Reinhold Palm, Sammlung Eisenbahnstiftung**

The development of the wagons was driven by the requirements and expectations of the loaders, i.e., the car manufacturers. Accordingly, the generations also differ in terms of their loading length and height as well as the loading technology.

From wagons of the 2nd to 4th generation, wagons for ARZ and Sylt traffic were derived or obtained, in some cases by conversion, because they were already designed for a maximum speed of 120 km/h. We will not explicitly discuss these designs and their special features below.

## Offs 55 and Offs 59

The second generation of car transport wagons hit the rails just over a year after the Off 52. The result of Graaff's development was the Offs 55 running on three axles (later designated Laekkms 542) for a maximum speed of 100 km/h, recognisable by the s suffix.

It was the first freight wagon to be designed from the outset to meet the requirements of the automotive industry. The VW T1 van was also to be transported on one of its loading areas. Only the upper one, whose loading dimension could be increased by 24 cm compared to the Off 52, was suitable for this, among other measures by using smaller wheel sets with 900 mm running circle diameters.

**This photo taken near Nuremberg on 5 June 1959 shows a loaded Offs 55 in its original design with sheet metal panels and railings on the lower deck. Photo: Joachim Claus, Sammlung Eisenbahnstiftung**

Furthermore, it was to have a longer loading level and the empty weight of the wagon was to be reduced. A smaller, passable track curve radius, and a handbrake were also required. The two-part, three-axle unit was fitted with a ball joint coupling in the centre, which also absorbed the tractive and compressive forces.

To save weight, the Offs 55 initially had no sheet metal side walls on the lower deck either, but only the tubular steel railings familiar from the upper deck outside the inscription panels. To increase the rigidity of the carriages, the design was changed to half-height sheet metal side walls during production.

By the end of 1959, the Bundesbahn had received 1,200 Offs 59 units, with a further 20 going to VTG, which then handed them over to DB in 1978. The carriages often travelled in block trains of up to 25 units. In 1963, the DB then equipped ten units with steam and electric heating lines as well as folding drive-over bridges to use them in motorail trains until they were replaced by the DDm 915.

**The top photo from Untertürkheim station shows an Offs 55 (Laes 542) in its modified design with half-height sheet metal side walls; for comparison, the photo below shows the original design again. Photo: Fritz Willke | © Stefan Carstens (top photo) & Carl Bellingrodt | Slg. Stefan Carstens (bottom photo)**

The Offs 59 car transport wagon (later Laaes 541) was another temporary solution and belonged to the first generation of vehicles, although it followed the Offs 55 in terms of time. Derived from the open goods wagon Omm 55, it had its essential features but was also extended at both ends by a unified front end.

At 25.3 tonnes, its tare weight was also significantly higher than that of the Offs 55, which shows that it was also used for a different purpose. They were fully equipped with KE-G brakes and were authorised for a maximum speed of 100 km/h.

**In June 1973, brightly coloured Opel Rekord in Hamburg-Wilhelmsburg on a Laaes 541 (ex Offs 59) waiting to continue their journey. Photo: Benno Wiesmüller, Sammlung Eisenbahnstiftung**

At 1,245 mm above the ground, the floor of the lower level was 10 cm lower than on the Off 52, resulting in a slightly higher loading height on the upper deck (without wooden inserts in the recesses). From the outset, all wagons had protective railings on the upper deck.

They were fitted with locking rails and the loose overrun recesses, which were later replaced by curved plates protruding over the buffers, which were firmly attached to one end of the wagon with a hinge and slid onto the opposite end of the wagon.

Temporary solutions are known to last the longest: of the 1,537 units built, 1,523 were still in service in 1984. From 1985 onwards, large-scale decommissioning and conversion back into open carriages began. In 1990, there were finally no more such wagons in the DB fleet.

## Modifications using the Offs 60

Overall, the existing car transporters had proved their value. However, when the production of vans and minibuses increased significantly at the end of the 1950s and VW was joined by Tempo and Ford, the loading height of the Off 55 on the upper deck was no longer sufficient.

Graaff now had to develop a vehicle that had a greater loading height and could transport vans on both levels. To achieve this, the carrying recess had to be lowered significantly. This was only possible if smaller wheel sets could be installed.

Once the Federal Ministry of Transport had given the go-ahead, the Offs 60 could be realised with a wheel circle diameter of 730 mm (minimum 680 mm when worn out). However, this also required further design tricks, as the wheel flanges partially protruded into the floor of the lower loading level.

As the lower loading level rose to 1,125 mm towards the end pieces, as with the Offs 55, the upper loading platform also had to be raised slightly above the normal position when transporters were driven onto the lower deck. The wooden covering of the upper recesses had to be abandoned and replaced by a rough coating of the sheet metal.

**The development of the Off 60 as a third-generation vehicle resulted from the sharp rise in the number of vans and minibuses being transported at the end of the 1950s. Photo: Fritz Willke | © Stefan Carstens**

There were also ARZ wagons derived from the Offs 60 and later modifications were made. The maximum number of this type in the DB fleet was 1,924 units, which were built between 1959 and 1964. They were followed by the wagons of the fourth generation.

For these wagons, which were no longer given national labelling as open wagons of the standard type (main type designation O) but were instead put into service with L as flat wagons of the special type. New specifications again applied:

- a further increase in loading length,
- loading improvements (no more bumps in the carriageway),
- variable positioning of the upper loading level, and
- equally suitable for industrial and ARZ traffic.

**The Offs 60 photographed in Stuttgart Hgbf, already referred to here as Laes 60 (later Laes 543), is characterised by smaller wheels and a loading platform that can be lowered to its full length, which made it possible to load vans on both loading levels in the first place. In its successor, the Laes 547 (photo on page 23), the wheels were adopted and combined with a loading length increased by 3 metres. Photo: Fritz Willke | © Stefan Carstens**

The Laes 547 also received the small wheels of its predecessor, which no longer prevented RIV capability and could therefore have made international use more difficult. The loading length increased by a full three metres, and those new wagons were additionally prepared for the installation of an automatic coupling.

As the loading platform was no longer divided, four end pillars were now sufficient. The platform could be lowered as a whole and could also be lowered on one side only. The form of load securing was also changed, as already noted in the generation features. The wagons were fitted with perforated rails for this purpose.

Rain drainage pipes for the upper loading level and hinged drive-over bridges, which made the drive-on recesses redundant, were implemented for the first time. Three prototypes of the described wagons entered service in 1964 and were subjected to detailed testing. Series production of 1,052 units only began in 1970 and continued until 1974. 856 units were built by Graaff Elze, the rest by Talbot in Aachen.

## The preliminary finale

With the Laes 547, the ratio of the axle base to the length between buffers was not satisfactory, which is why the DB had a prototype Laes 552 built, which had two 10.0 metre axle bases. The smaller overhangs improved the running behaviour and possibility to couple in track curves. However, this wheelbase was not accepted internationally.

Eight years passed before the Bundesbahn procured another 200 series wagons in 1979/80 because there was a shortage of car transport wagons. However, further procurement of the Laes 552 or the Laes 547 was no longer an option.

DB was the only state railway in Europe to have many double-decker carriages in its own fleet. In neighbouring countries, this had long been the task of private operators. Due to the different design features, mixed operation was hardly possible.

The 4th/5th UIC Committee in 1976 therefore decided to standardise the wagon fleet with the aim of joint use. The German Federal Railway finally decided in favour of a four-axle design.

**Here, a Laaeks 553 of DB Cargo Logistics GmbH (ex DB Schenker ATG) is seen on 1 August 2024 in a train formation passing through Wilnsdorf-Rudersdorf (Siegen district). The wagon with the road number 25 80 4367 693-5 D-ATG was built by Waggon-Union Berlin in 1988 and was transferred to ATG by the Bundesbahn. Photo: Armin Schwarz**

The Graaff company was once again awarded the development contract in 1979. Their specifications for the future Laaeks 553 were now as follows:

- simplest possible design (to save on procurement and maintenance costs),
- intended only for car transport in industrial traffic (but can be retrofitted for ARZ traffic),
- designed to run at 120 km/h,
- suitable for 100 km/h with a pre-signal distance of 1,000 m,
- RIV-capable,
- Undivided, level loading platform that can be lowered on one side,
- Using the lifting and lowering devices of the Laes 547, and
- Operation of all elements from the outside (so that loading levels do not have to be entered under a suspended load).

As the carriages were only intended for passenger car traffic, the wheel circle diameter could be increased again to 840 mm while complying with the specifications. Two prototypes went to the Bundesbahn as early as 1980, which tested and demonstrated them extensively for several years.


**The well-maintained 189 024-3 pulls the empty train EZ 51273 (Hagen-Vorhalle - Gremberg) on 2 March 2023 near Köln (Cologne)-Dünnwald. By this time, Deutsche Bahn AG had long since taken over ATG and integrated car transport into its group. Former Bundesbahn wagons and new designs of special wagons were thus returned to the DB fleet. Photo: Joachim Bügel, Eisenbahnstiftung**

As they proved their value, they were transferred to series production in 1986 with almost no modifications. In this year, 1,000 units were ordered and delivered (200 units each from Graaff Elze, Duewag, LHB, MAN and WU). Further wagons followed from 1987 to 1989, until the stock had risen to a total of 2,151 units when the ATG was introduced.

**Webpages with further model photos:**
https://www.bkcw-bahnbilder.de
https://www.eisenbahnstiftung/bildergalerie
https://hellertal.startbilder.de

**History of the VW Beetle (in Trainini® 6/2018):**
https://www.trainini.de/magazin/ausgaben

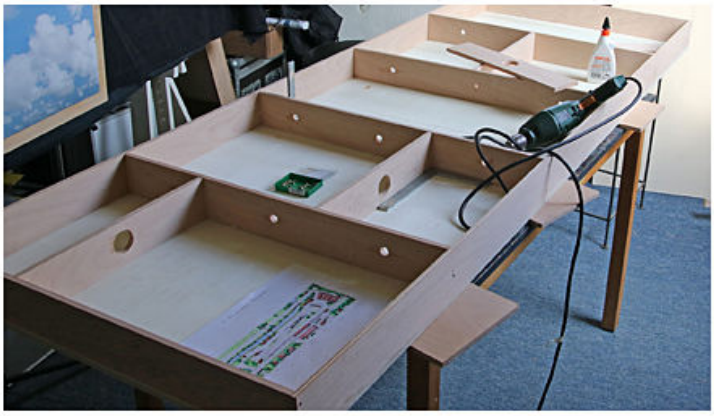
The path to the first layout (part 3)

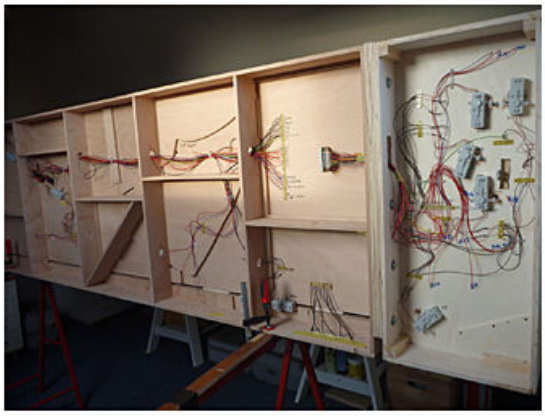
# The Foundation of every Layout

***The feeling of having made some real progress on building a model railway layout usually comes when the landscape finally turns green. But there is a long way to go until then and we are not quite there yet. Dirk Kuhlmann is building with you today the wooden foundations which are essential for smooth and safe operations on your future showpiece.***

In this third instalment of our series on building beginners' layouts, which is also the second article on building one completely from scratch, I would like to go into the details of planning and procuring the necessary wood supplies. Of course, everything used to be easier...

In the old times, one would simply remove the fittings from a discarded wooden door, place it neatly on two wooden trestles and presto, model railway baseboard done! Our older readers will certainly remember these ‘wild’ pioneering beginnings. And who wouldn’t be surprised if the origins of the typical Märklin HO scale R1 and R2 curve radii could be traced back to such a set-up?





**The baseboard frame construction is captured here in photos: On the left one can see the underside of the ‘Bad Rothenzell’ diorama and on the right that of the ‘Kniephaven’ layout – a sturdy affair.**

Nowadays, we must or want to pay attention to many different aspects. Although nothing has become more difficult, our own expectations have risen noticeably since those years. I would like to illustrate this with two examples.

The open frame design has become the norm for stationary layouts. The entire mechanics, electronics and the wire assembly can be accommodated neatly underneath the layout. Easy access for maintenance and repair is possible at any time.

Whereas semaphores used to have clunky and clearly visible drives on the surface, modern versions require a depth of at least 5 cm underneath the layout to fit their electric drive. This is for sure an aspect that needs to be considered during the planning phase.

Another advantage of the frame construction method is flexibility for landscape design and the possibility to model elevations and depressions. If a corresponding base plate is now fastened to the open frame with glue and screws, we obtain a sturdy base structure.

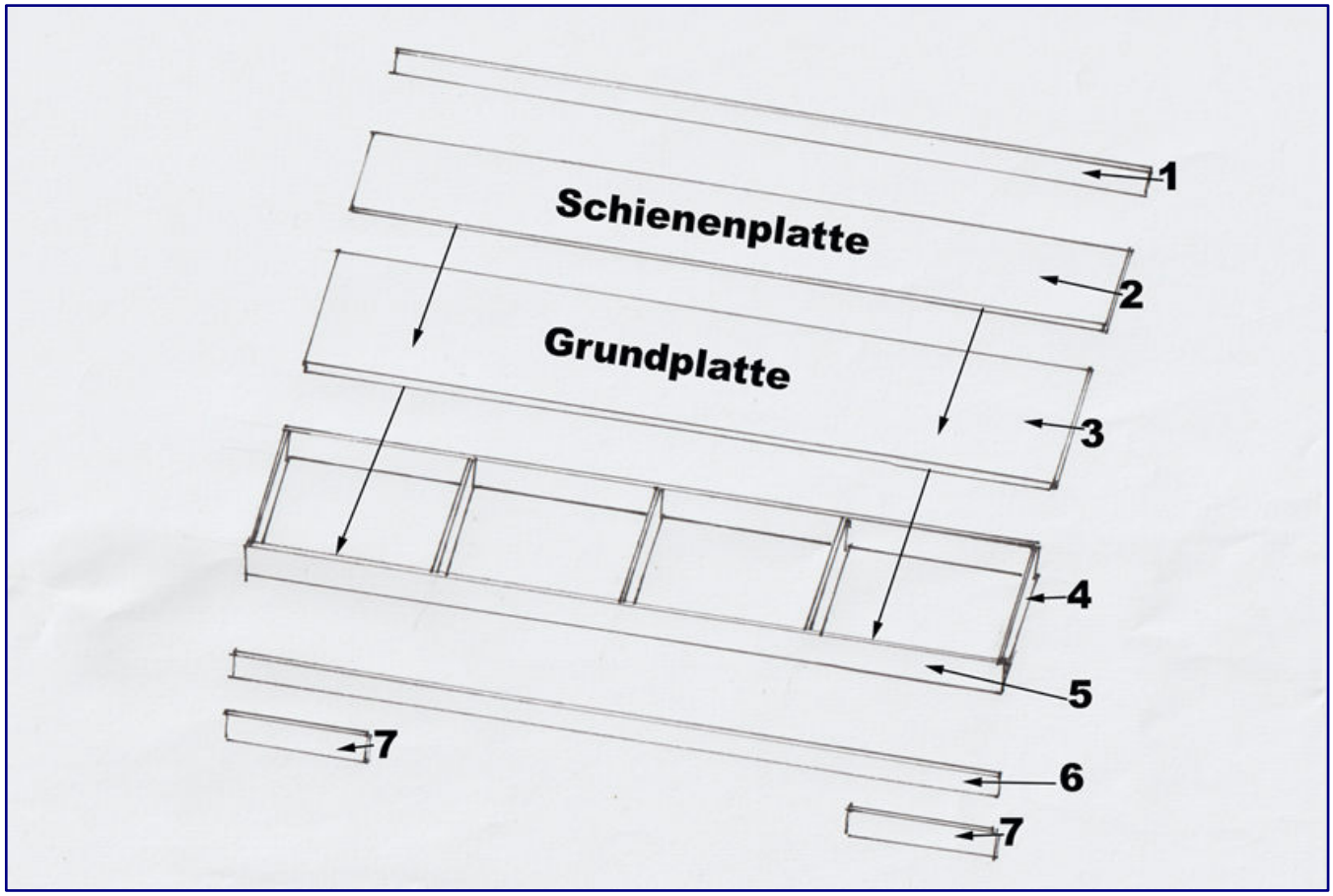



**Illustration of the baseboard design and the corresponding parts (see text for descriptions). Schienenplatte = Track base / Grundplatte = layout base (base plate)**

Planning and drawing

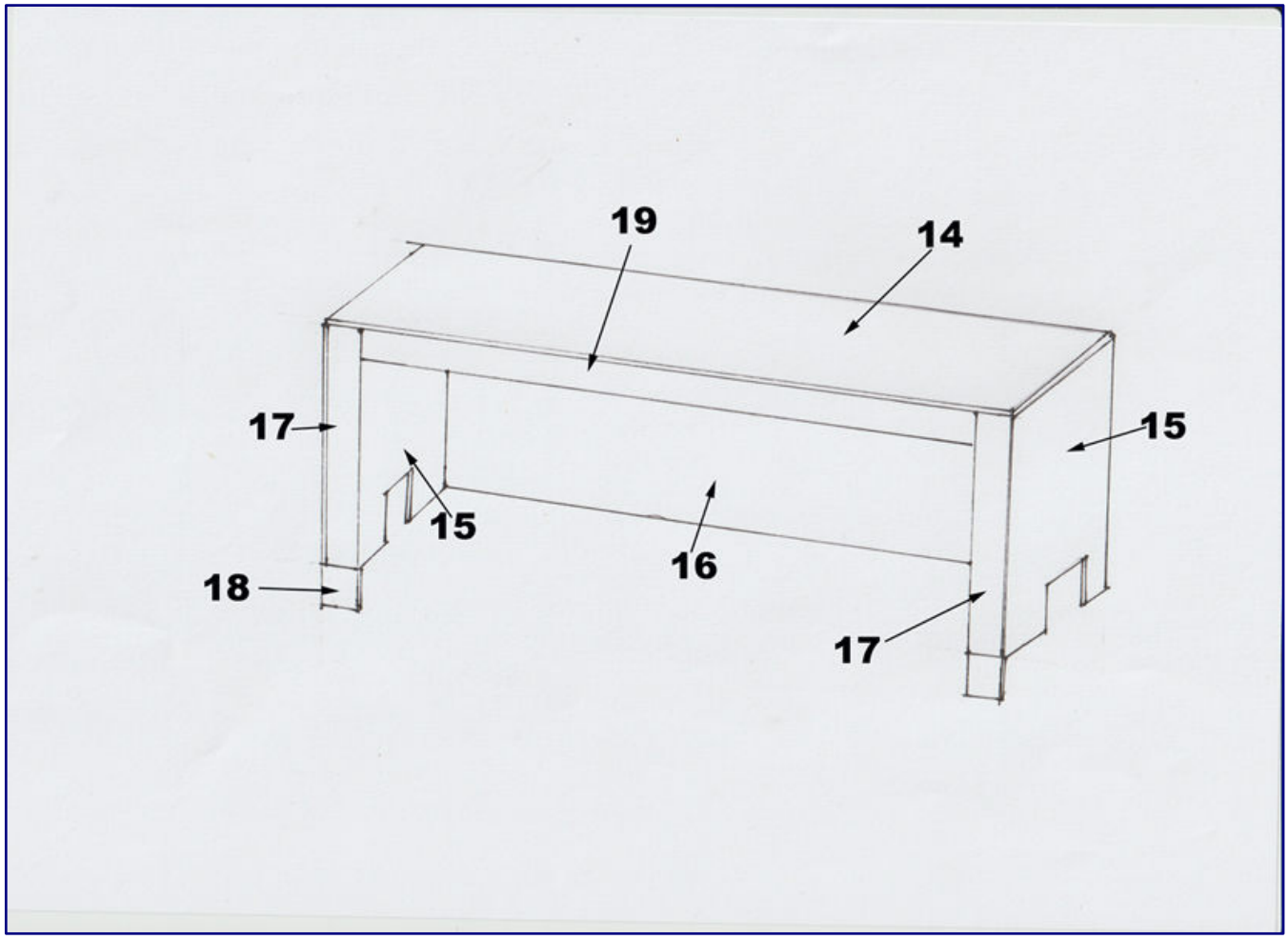
I will now show you how to get there. Pay attention to the numbers in the plans and in the text, as well as in the later episodes!

As a rule, the baseboard parts list is derived from my coloured drawing of the layout plan. Assuming a panel thickness of 10 mm, the construction plans should be easy to follow for everyone. The layout's overall footprint of the layout's landscaped section is to measure 180 x 25 cm in its entirety, including the future light box.

I now subtract 1 cm from the rear and sides (the space for panels 15 & 16 of the future light box) and arrive at 178 cm x 24 for the base plate (3). The longitudinal beams (5) for the frame are therefore 178 cm x 5 cm.

The five cross beams (4) will thus have to measure 22 x 5 cm. The dimensions for the panel on which I will place the track (2) are 178 x 20 cm. This is larger in depth than needed but will eventually be trimmed to size with the help of a jigsaw once we decide on the final topography of the terrain. The track panel will then be placed on offcuts of leftover wood to give an elevation of 2 cm with respect to the baseboard level and to already prepare for the desired railway embankment.

Our base plate represents in this case level 0 and thus the water surface in the landscape module. With these basic parameters in place, I can now immediately calculate the dimensions of the light box However, we will deal with this structure at a much later stage and only after performing the all-important functional checks upon completing the laying of track laying corresponding wiring work.




**This drawing gives us an initial visual impression of the layout's future light box. The construction will occur later.**

We therefore continue immediately with building the modules for the side sections and the staging yard. The design is similar to the landscape segment, except that the frame (8 - 11) is 7 cm high so that it is level with the height of the track base (2).

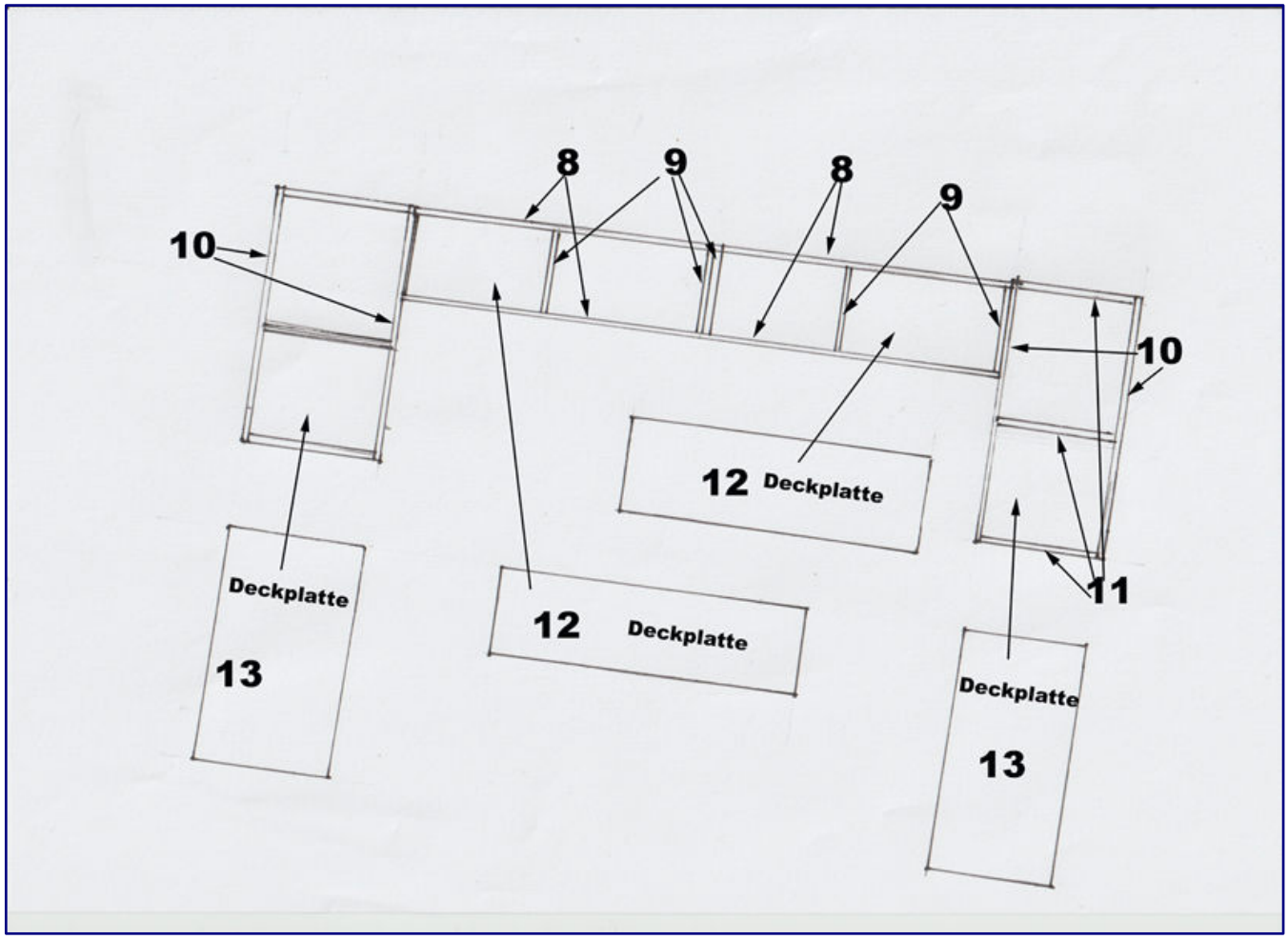
In my considerations, these segment boxes are intended to allow a 'variable circumnavigation.' The later staging yard (8, 9, 12) is divided into two parts and also allows the installation of a smaller layout with a width of only 90 cm. Furthermore, a segment measuring 180 cm x 20 cm is more difficult to store compared to two subsections.

The 60 x 30 cm side bypasses (10, 11, 13), on the other hand, are slightly larger in depth, so that trains on a 'grown-up' model railway layout with a designed area of maximum 180 x 60 cm could later take up their circuit here. Our four segments can therefore be regarded as 'universal bypasses.'

Once built, they can be used for many applications. Do you remember the 'Ellzee' track plan? I discussed the design in detail in **Trainini®** 6/2019. At 180 x 40 cm, this layout also fits into the universal scheme presented.

**Practical tip**
At a scale of 1:220, a layout should preferably not be deeper than 70 cm. Otherwise, the overall visual impact tends to diminish.

These visual limits also hold true for other scales. There are of course no universal standards for this and one's personal perception remains important.




**The bypasses and the later staging yard are also built using the stable frame construction method. Deckplatte = Layout baseboard (base plate)**

## The cutting plan

I have now determined all the required dimensions and enter the measures in my list. To keep down costs at the carpentry shop, I draw up a cutting plan for the foreman. I prefer class 1 poplar plywood panels measuring 2,500 x 1,700 mm.

As is so often the case, I can't include a few pieces in the sawing plan without ordering a whole new panel. In our case, it's the two 60 x 30 cm top boards (13). Sometimes my carpenter will have some extra panels lying around, otherwise the DIY store has to help out. An important note at this point: The **Trainini®** editorial team and its authors accept no liability for the accuracy of the calculations.

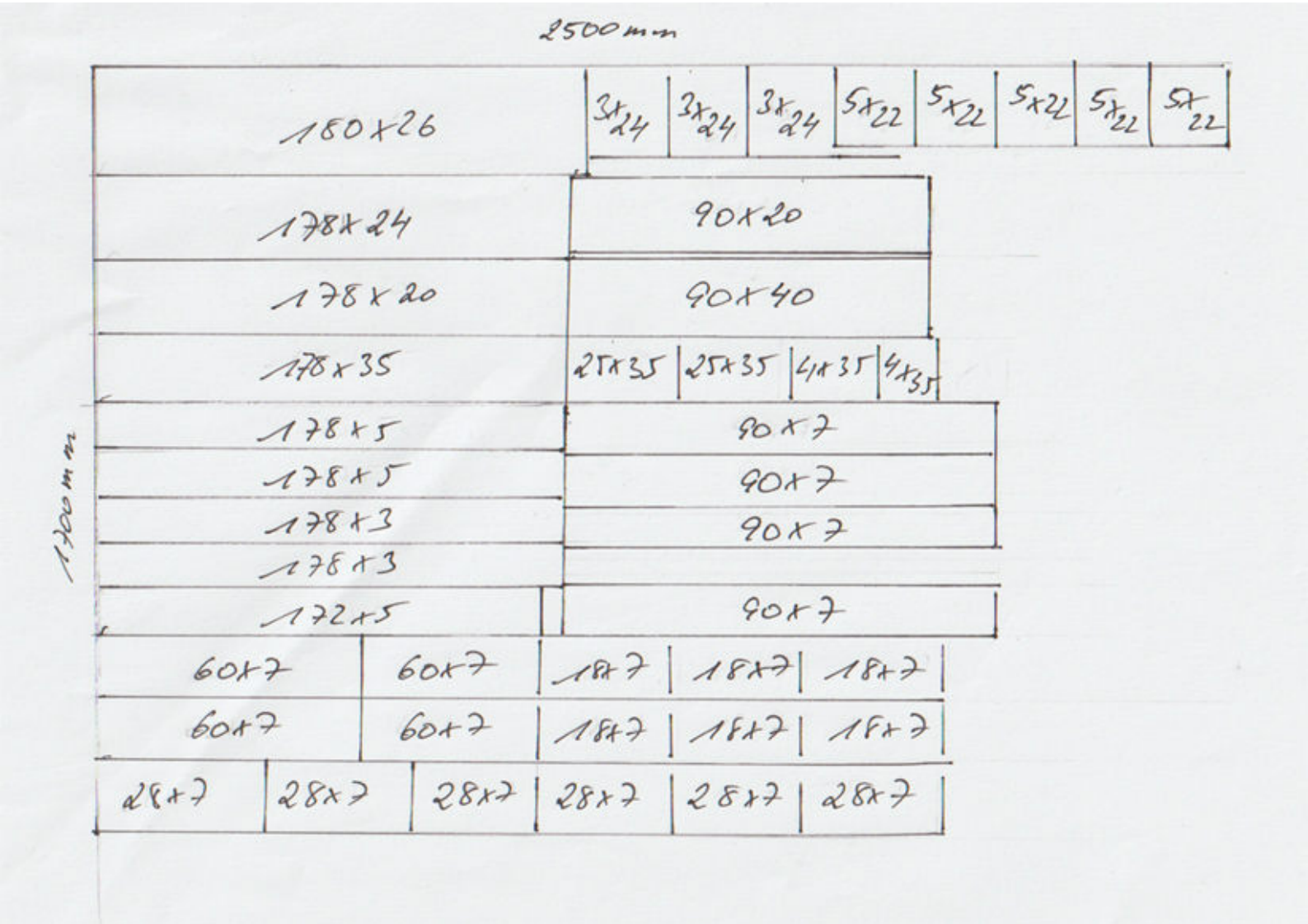
If you plan to take your showpiece to several exhibitions, here is a practical tip from me: My well-known ‘Kniephaven’ and ‘Diemeltal’ Z gauge layouts have a baseboard frame made of 10 mm thick beech wood, and only the base plates are made of poplar. This makes them heavier, of course, but also sturdier for rough everyday use.

**continued on page 40**

**The list of the required wood pieces (information without guarantee) can be found at the top of the following page. To save costs, the cutting plan is usually prepared by the customer (following page, photo below). Please make sure to include sufficient margins to account for the thickness of the saw blade (usually 3 - 4 mm).**

Holzbedarf 10 mm

| | Nr. | Maß | Stückzahl |
|---|---|---|---|
| **Diorama / XXI Vitrine** | | in cm | |
| Unterbau für Schienenplatte | 1 | 178 x 3 | 1 |
| Schienenplatte | 2 | 178 x 20 | 1 |
| Grundplatte | 3 | 178 x 24 | 1 |
| Querträger | 4 | 22 x 5 | 5 |
| Längsträger | 5 | 178 x 5 | 2 |
| Träger Guckkasten hintern | 6 | 178 x 3 | 1 |
| Träger Guckkasten seitl. | 7 | 24 x 3 | 2 |
| **Variable Umfahrung** | | | |
| Längsträger hinten | 8 | 90 x 7 | 4 |
| Querträger hintern | 9 | 18 x 7 | 6 |
| Längsträger seitlich | 10 | 60 x 7 | 4 |
| Querträger seitlich | 11 | 28 x 7 | 6 |
| Deckplatte Umfahrung | 12 | 90 x 20 | 2 |
| Deckplatte Schattenbahnhof | 13 | 60 x 30 | 2 |
| **Leuchkasten mit Kulisse** | | | |
| Deckplatte | 14 | 180x26 | 1 |
| Seitenplatte | 15 | 25 x 35 | 2 |
| Kulissenplatte | 16 | 178 x 35 | 1 |
| Stützholz | 17 | 4 x 35 | 2 |
| Seperate Stützen | 18 | 4 x 35 | 2 |
| Lichtblende | 19 | 172 x 5 | 1 |



The build

It typically takes a week until I can collect the cut wood from the carpenter. The first thing to do now is to carefully sort the pieces, pencil mark each board with its serial number and dimensions, noting its serial number and dimensions in pencil. This helps to have everything readily at hand during the build.

The list of necessary tools and materials is short:

- Cordless screwdriver (e.g. from Bosch)
- Corner clamp
- Metal bracket
- Wood glue (e.g. Ponal-Express)
- Spax screws 2.5 x 16 mm
- Hole saw 20 mm

Using the hole saw, the apertures for wires are drilled in the centre of the cross struts (4, 8, 9, 11). Now it's time to assemble the boat, whereby I drive the Spax screws directly into the wood. The corner clamp holds the pre-glued frames together at a 90° angle.

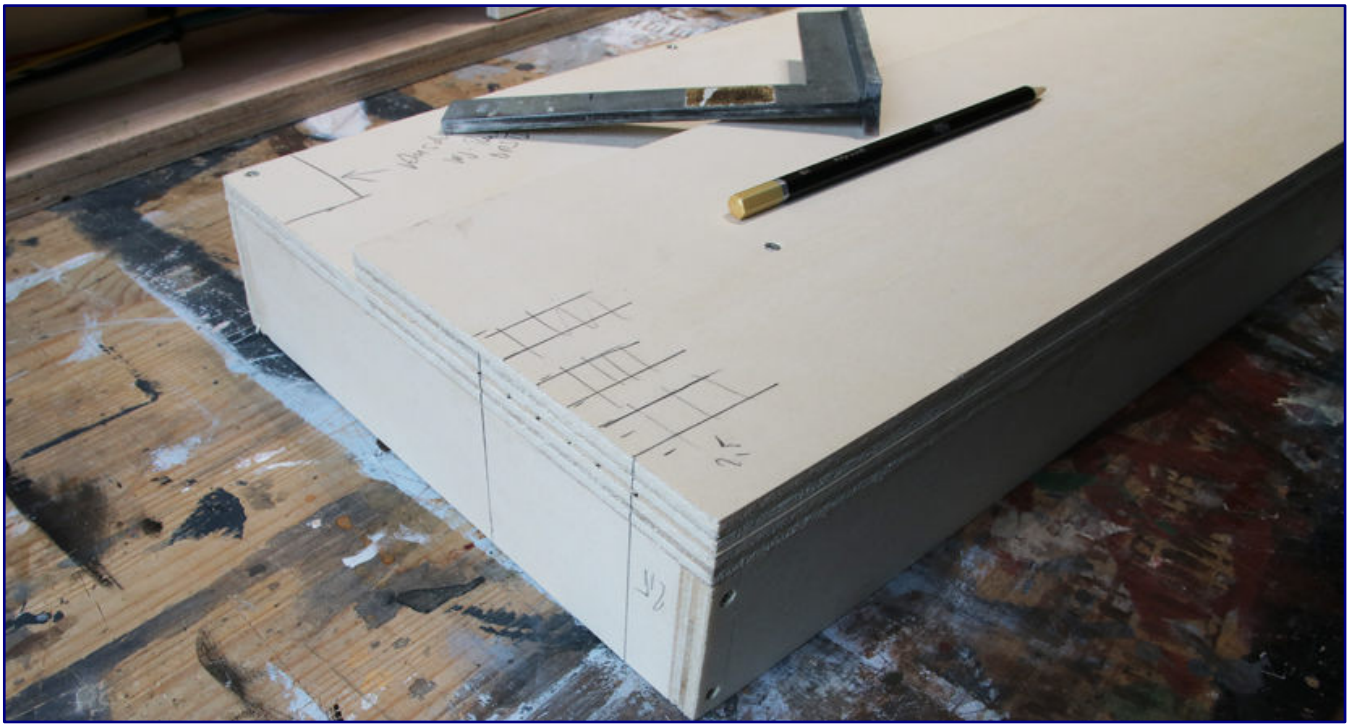
**A hole saw, here measuring 26 mm, is used to drill the subsequent wire passages in the frame.**

Two longitudinal (5) and cross beams (4) form the base frame. I then always screw the base plate (3) onto this. Before inserting the other cross beams, I look at my track plan and briefly calculate the appropriate position. It happens to me again and again that, for example, the setting rod of a turnout could end up directly above a cross strut. A few centimetres offset and this strut is no longer in the way.

**continued on page 43**


**The frames can be fixed and screwed together quite well with a corner clamp.**

**This is what our future showpiece will look like on the underside. It provides enough room for any electronic components.**



**In my case, I already had to position the track base panel (2) and precisely mark the subsequent track layout. Instructions for how to do this will be provided in the next part of this series.**

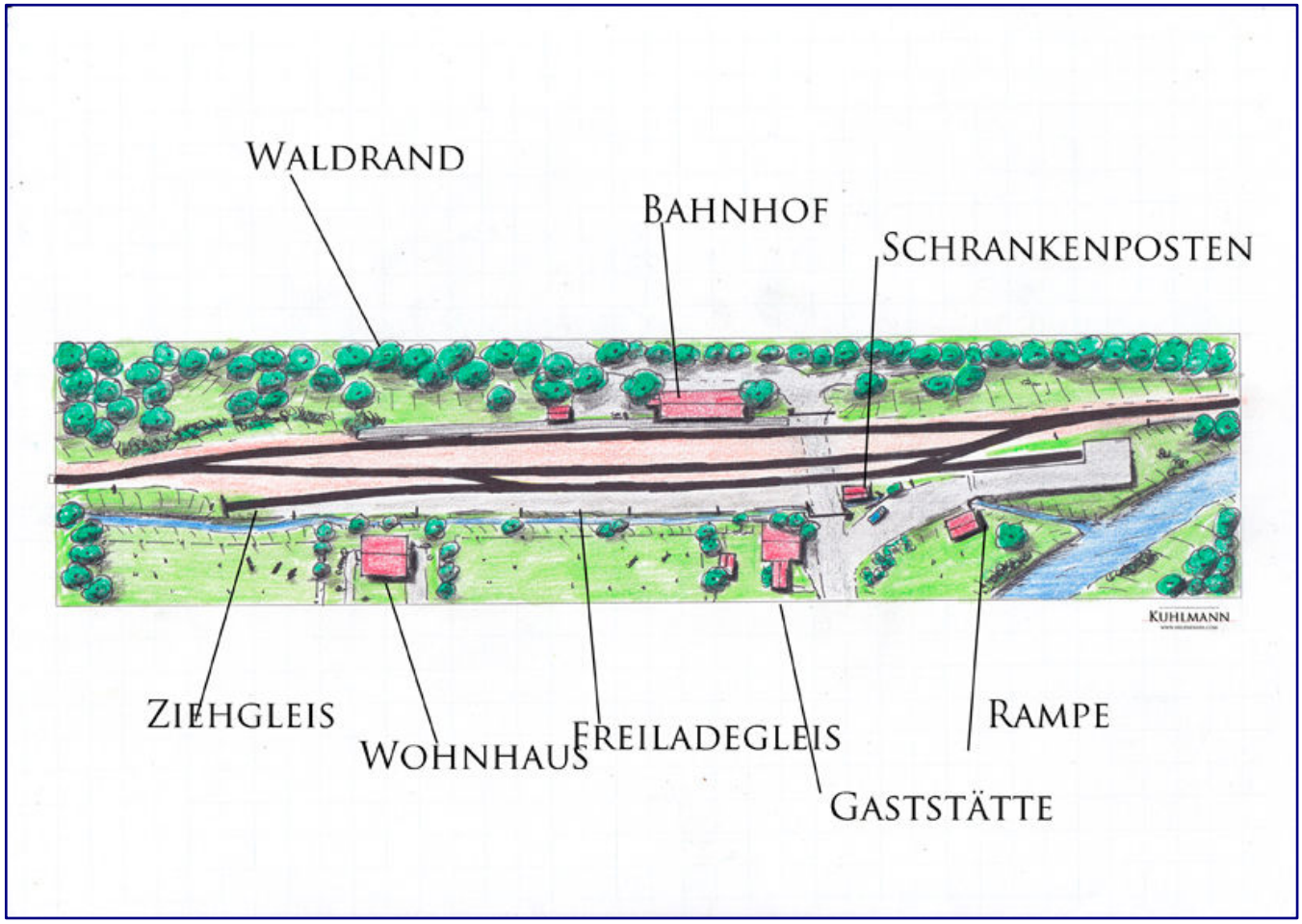

**These images show one of the four side segments which is already fitted with a cork layer. Clear labelling prevents confusion during the future use of the segments, especially during hectic exhibition operations.**

The ‘universal bypass’ segments are built in exactly the same fashion. As the work progresses, you will realise that the cutting, and even the wood from a professional carpenter, are of a completely different quality compared to a DIY center. It simply fits!

After a day of rest, a 2 mm cork base layer should be applied to the four segments of the bypass. Every well-stocked DIY store carries this material. I attach it to the base with waterproof Ponal wood glue. Any excess is cut off with a sharp knife. In the next instalment, we will look at laying the track and the power connections.

## Conclusions

If this design and the building suggestions seem too uniform to you: That doesn't matter, because it's the inner values that count! A beautiful train in a beautiful model landscape, what more could one wish for?




**As a reminder, the ‘Ellzee’ track plan from Trainini® 6/2019. Translations above: Forest edge, train station, barrier (crossing) station; below: rail siding, residential house, free loading track, restaurant, ramp**

Perhaps with refreshing and completely new ideas from you? I've had to live with a lot of imitators for years when it comes to ‘light box’ layouts and ‘rusting layout signs.’

Of course, I see it more as a recognition of my work and hopefully the basis for the ideas of many model railway enthusiasts. Feel free to copy any ideas as a beginner and develop your own handwriting over time. It is worth it.

**Material and tool suppliers:**
https://www.bosch-diy.com
https://www.ponal.de
https://www.spax.com

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Alternative building construction (part 3)

# Contemporary Architecture

***In his two previous articles on modelling buildings from scratch, our author focussed heavily on historical prototypes. However, post-war architecture right up to the present day also lends itself particularly well to the vinyl film technique. Supplemented by a few tips for good results and templates to copy, our small series comes to a good end today.***

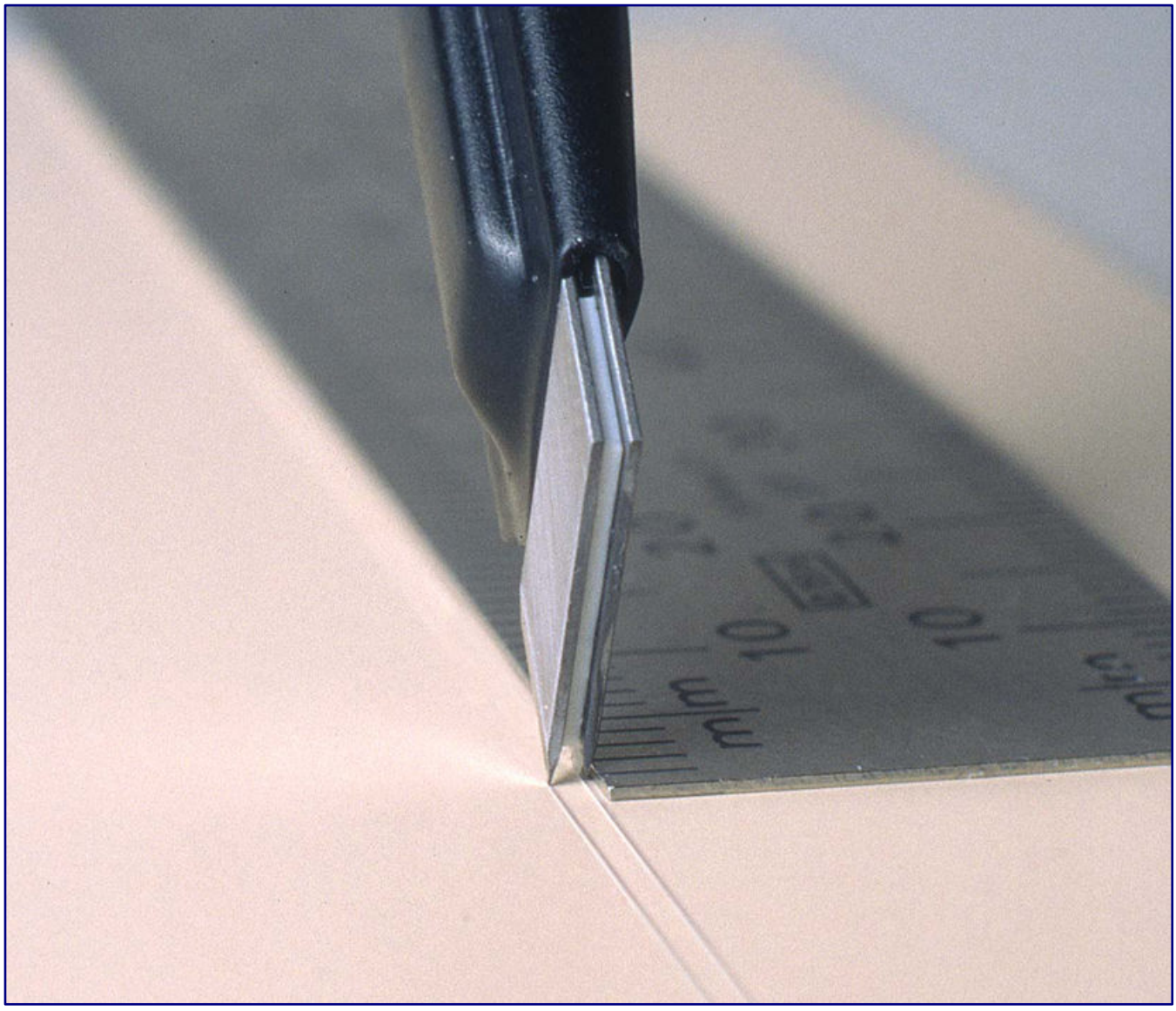
By Reinder Rutgers. As announced in the second part, I would like to focus on modern buildings again today, but also pass on a few tricks and tips. And finally, I would also like to present some buildings for you to try out, because practice beats theory.

**Reinder Rutgers has given an impressive demonstration of working with vinyl foil. Before providing our readers with the latest tricks and ideas for modern architecture and craft templates, this model arrangement with the Zeughaus tower based on the prototype located in the South German city of Urach intends to provide some motivation to tackle something similar.**

Vinyl film is particularly suitable for the construction of modern buildings. Their walls have plenty of glass surfaces, are often made entirely of glass and are sometimes extremely flat. The principle of the film method of a ‘glass house’ works perfectly in this context.

At the same time, the walls are usually strictly geometrically structured, which is quite a challenge when cutting things by hand in Z scale, because even the slightest deviation will visually stand out. With glued on drawings, as I described in part 2, we can make progress here. However, it can be done even better with simple tools.

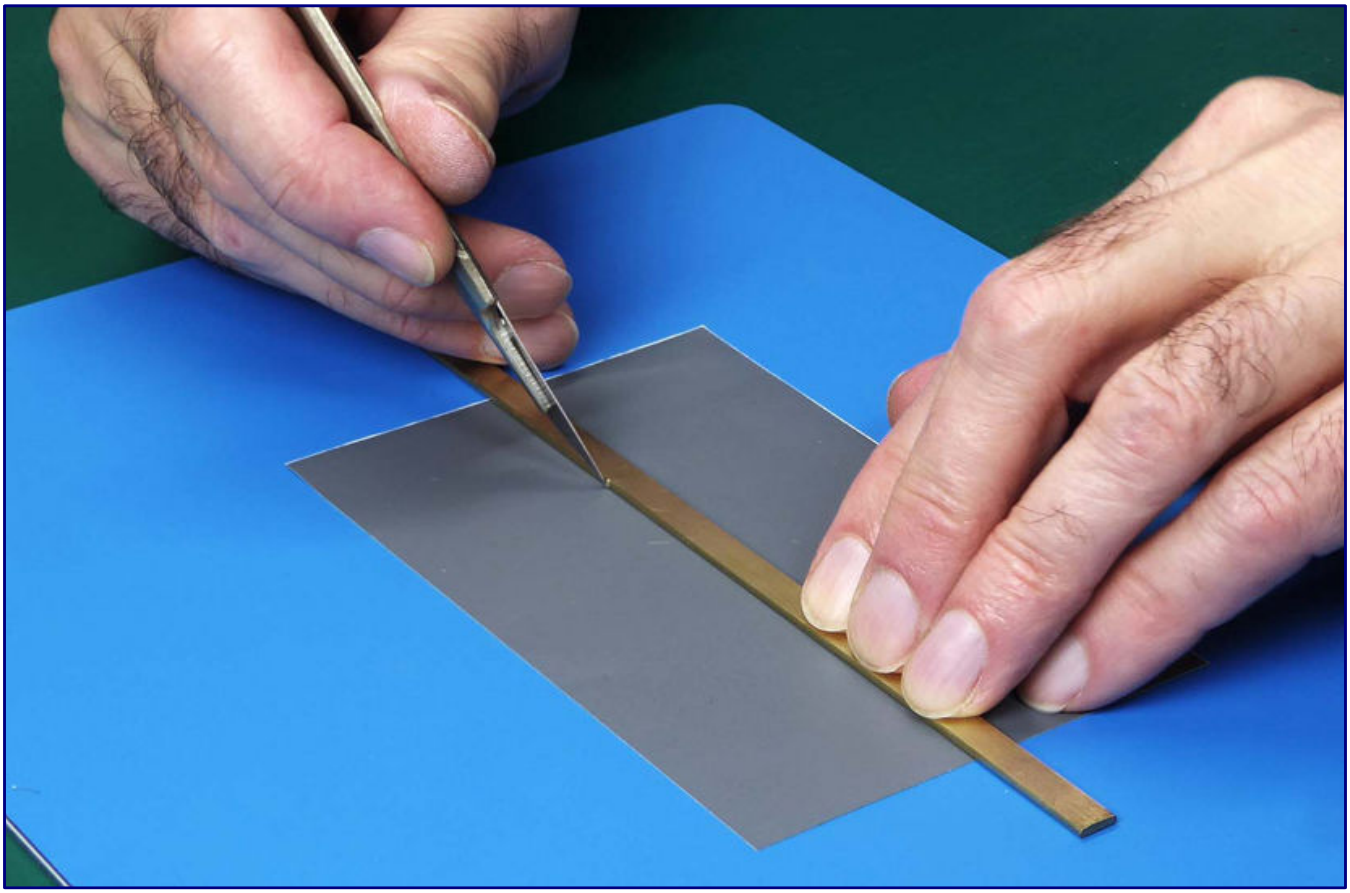
The cutting of narrow strips by using two blades glued together has already been described; this does not require any further explanation here. However, there are many situations where parallel lines are desired in modelling, but where they are too far apart for this approach to work.



**We cut parallel lines with two snap-off blades glued to each other and intermediate plates as spacers.**

However, there are several ways to achieve the required precision. First and foremost, measuring rods, flat profiles, or strips, which are available in modelling shops from brands such as K&S, Albion Alloys, or even unbranded materials, are the basis for this.

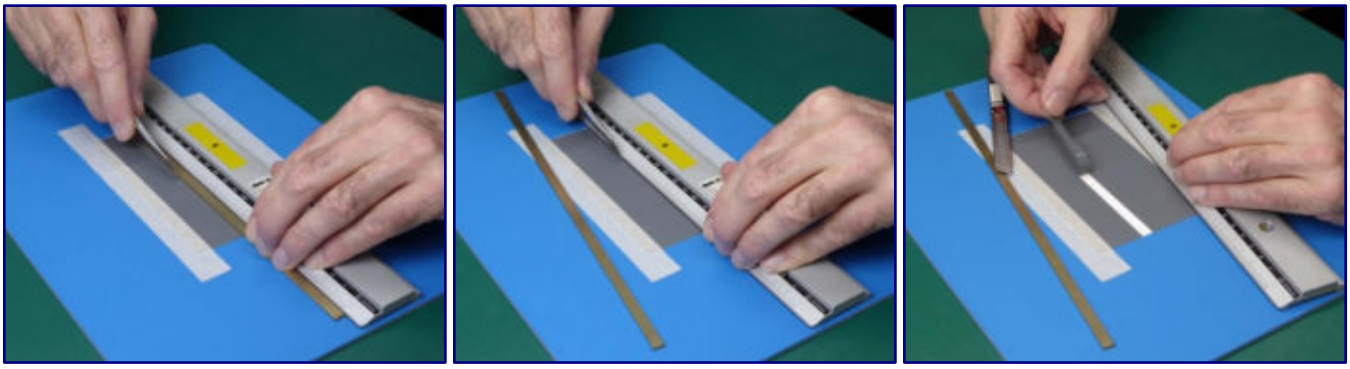
The smallest ones measure 1 x 0.5, or 1 x 1 mm. Brass is hard enough to function as a guide for small modelling knives, always on the condition that cuts are executed carefully, which should be a matter of course when working in this small scale. Polystyrene strips may also be suitable for one-off use. It is always important that the knife is held securely and that the blade lies flat.



**This is the simplest, but also the riskiest solution for executing parallel cuts.**

The easiest way is to use a brass strip of the desired width and then cut along both sides. However, this only works for very short lines because there is a risk that the strip will not remain securely in position. The further we cut from the stopping point, the greater the risk.

Fortunately, there is a better solution: a ruler is placed on the position of the first line. Then place the brass strip against it. The cut is now made along the brass strip. The brass strip is pressed against the ruler by applying light pressure with the knife. The piece of brass is then removed, and the second line is cut. The result is two parallel lines, the distance between which is determined by the width of the selected strip.



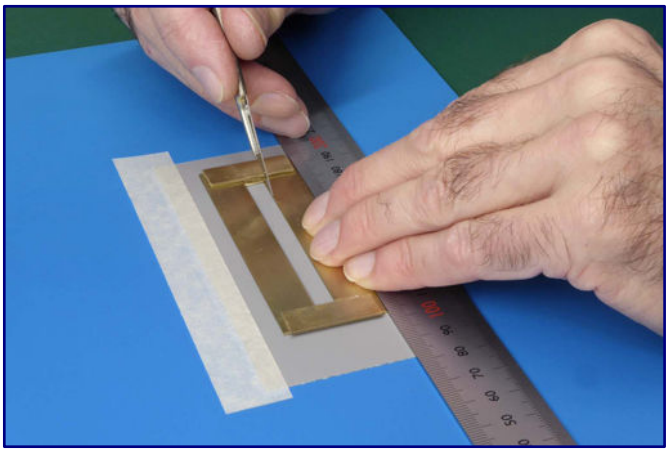
**This is how parallel lines are cut using a ruler and brass strip: First, a line is cut using a brass strip (left photo), then the ruler remains in the same place and we cut the second line after putting the brass strip to one side (centre photo). The exact parallel cut is finished (photo right). It is worth using a good, non-slip ruler here!**

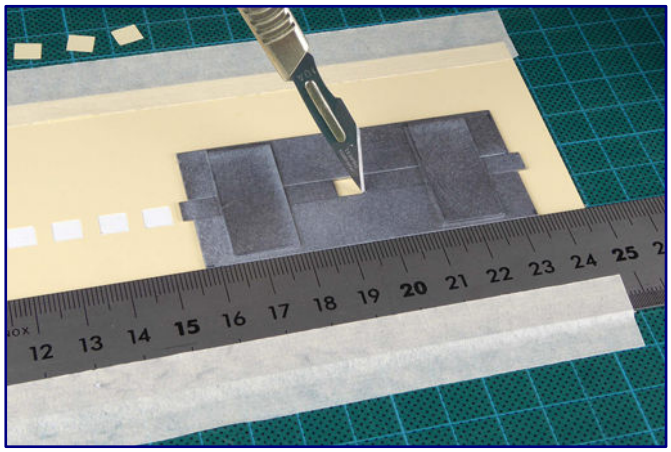
## Construction of stencils

For elements with two horizontal and two vertical lines, for example windows, we build a template. The first thing that springs to mind is a brass plate with a rectangular opening. But, it is almost impossible to create such precise shapes: Straight edges with an angle of exactly 90˚ degrees present a problem that is almost impossible to solve.

We therefore 'build a hole' with the brass strips already mentioned, which have straight and parallel outer lines. The thickness of the material is not critical here. The thinner the material, the easier it is to guide the knife exactly along the sides. It should not be so thin that the template becomes too weak. 0.5 mm is quite suitable for our purposes.

Six strips are then used: two each for the top and bottom. These should be wide enough so that the template can be held in place easily. There are also two strips for the sides and spacers. Only these need to be sawn off exactly at right angles on one of their sides. There are simple tools available commercially for this. For all other strips, it is not critical whether the short side is cut precisely.






**The photo on the left shows a template made from six brass strips. Cutting is done with a very pointed blade, which should be extremely sharp. Holding the knife well is important for success. The photo on the right shows a template for windows made from strips of sheet steel. The non-slip ruler has been glued in place here. The blade is tilted against the cutting direction at the end of a cut in order to cut precisely into the corners.**

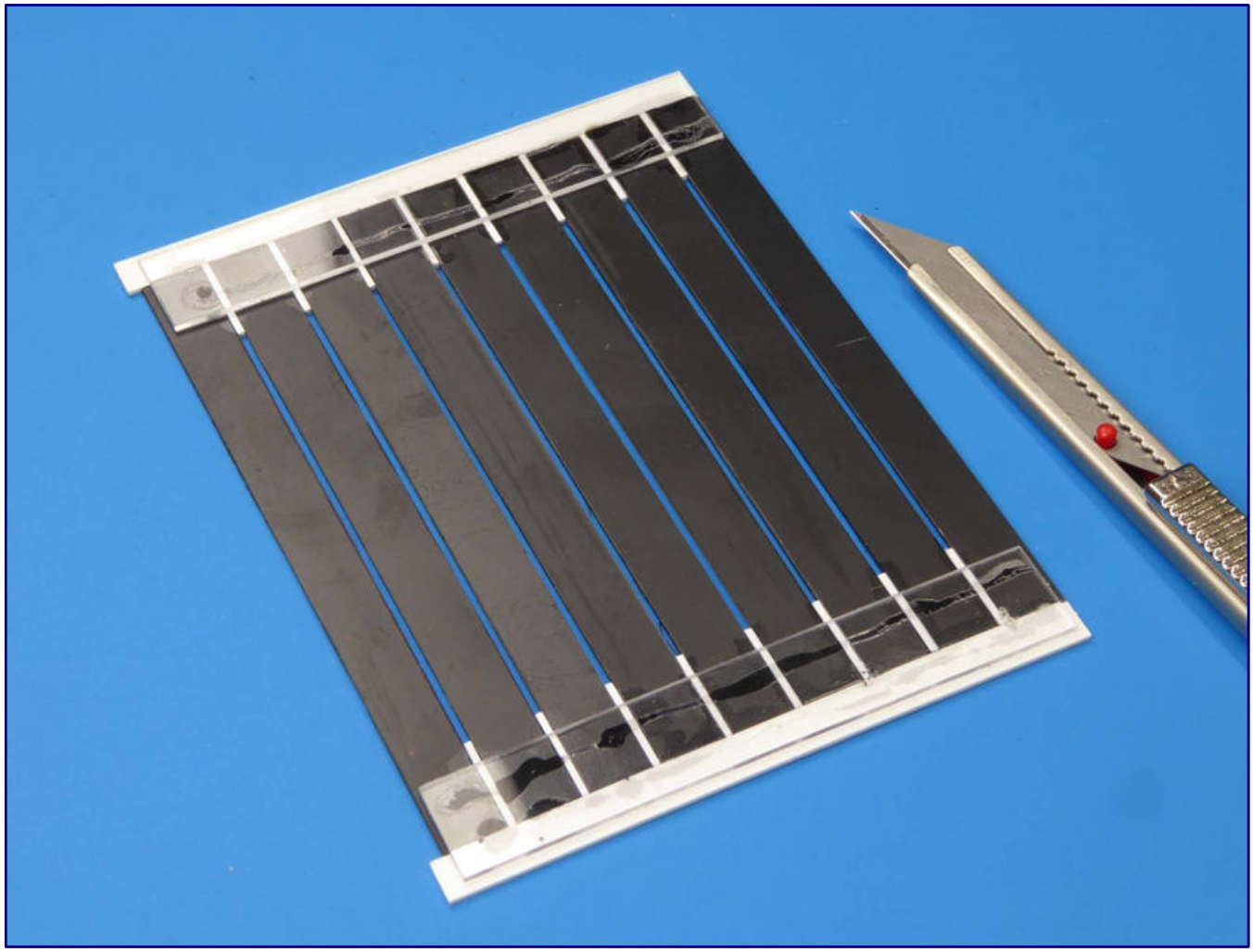
The third pair of strips is glued across the other strips using epoxy resin or superglue; soldering is also possible as an alternative. The template produced in this way can be guided along a ruler and makes it possible to produce a large number of identical openings or even parallel lines if the opening is large enough.

With a little skill, such strips can also be used to create templates for triangles, parallelograms, wedge-shaped openings and other shapes. It is also possible to make a full-surface stencil that can be used to cut a whole series of lines at once.

Only those who want irregular shapes or rounded corners would need to make a template from a brass plate. Whenever many identical openings need to be cut, the effort involved is worthwhile.

## Creating a modern wall

In the following, we will now tackle the construction of a wall for a modern building. A piece of vinyl is first glued to a transparent panel. The floor heights are then marked.



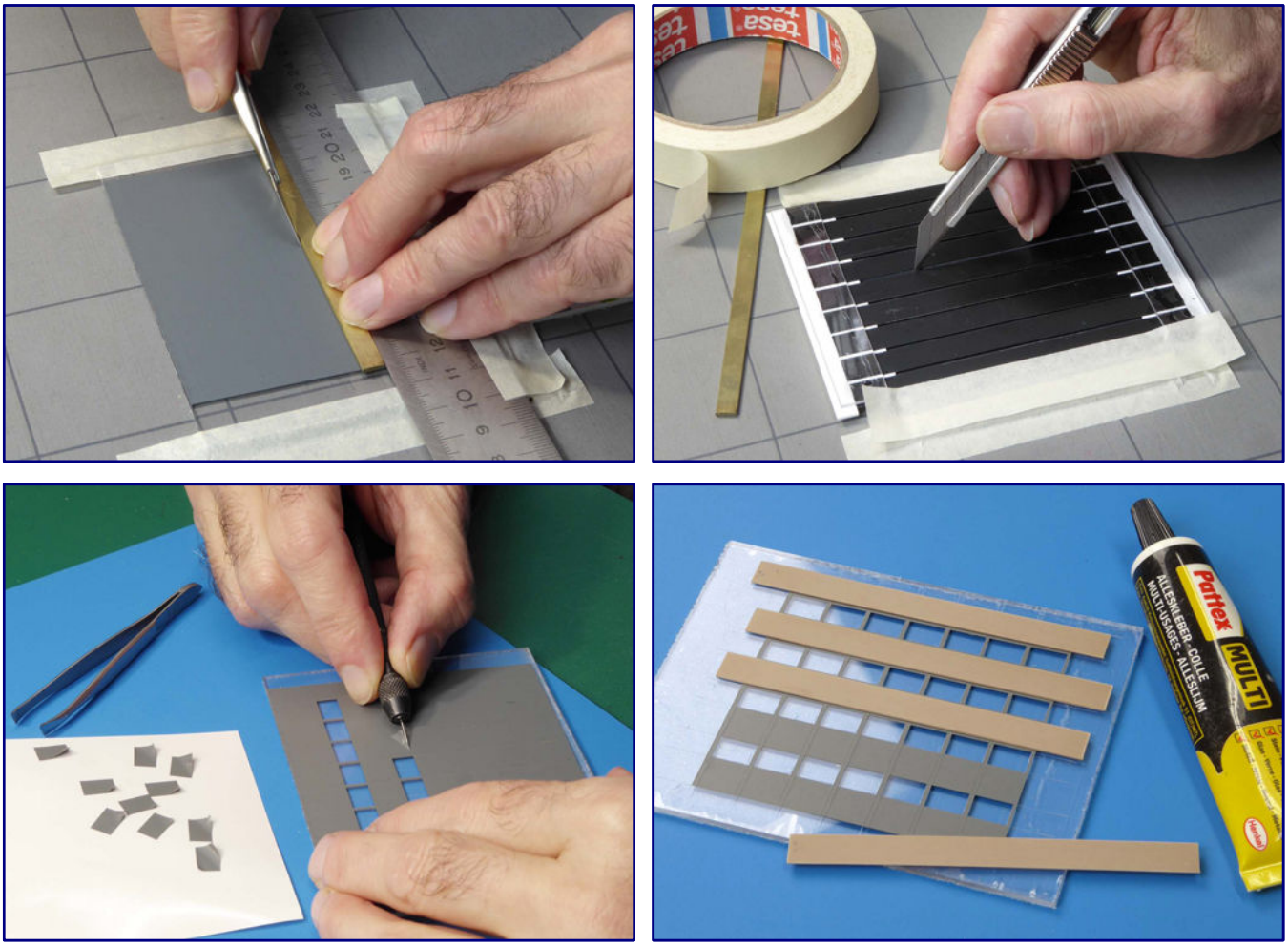
**This is what a template for several parallel cuts looks like. For photographic purposes, it was made from polystyrene of different colours to illustrate the structure: Everything is held together by cross strips (transparent PS) glued over the ends. We recommend building such templates from brass sheets.**

The horizontal and parallel lines for the windows can now be cut - using the brass strips mentioned above or the template. If the ruler is not sufficiently non-slip, we stick it to the support surface with masking tape.

All lines are simply cut over the full length from left to right, without taking the subsequent window division into account. This is possible here because it is only one layer and the thinnest strips are ultimately a full 1 mm wide. They therefore adhere sufficiently to the surface when the remaining pieces are removed. A width of 1 mm would be too much for residential buildings, but it is suitable for commercial buildings.

Now, place the ruler or slotting template perpendicular to the first cuts on the material. To make sure that they do not move, secure them again with masking tape. And again, we now cut continuously and pay no attention to the window division.

If no weathering or colour correction is planned, the remaining pieces can then be removed; I have already described the procedure for this. The wall in front of us could be used, as there are plenty of buildings whose glass fronts are completely flat.




**For a modern wall, we stick a piece of vinyl onto a transparent panel and mark the floor heights (photo, top left). Then, when cutting the horizontal parallel lines, we pay no attention to the window division. The slitting template is then placed vertically on the material (photo, above right) and fixed in place so that it can be cut securely. The remaining pieces can then be removed (photo, bottom left), for some buildings the result is already usable. Otherwise, we add structure to the façade by attaching polystyrene strips with all-purpose adhesive (photo, below right).**

In my case, after cutting the windows, I also stuck on vertical strips of dark vinyl. It was then weathered with pigments and paint, and the windows of this run-down building also received a layer of dirt.

A second object shows how more relief can be added in a simple way. A layer of vinyl is cut according to the same pattern as before. Horizontal polystyrene strips are then glued on with all-purpose glue. We rely on our eyes for alignment. To make gluing easier, the strips to be glued are considerably longer than necessary.

We therefore only need to worry about precision in one direction. There is another reason why they need to protrude from the wall: To create a mitre later, we need this length.

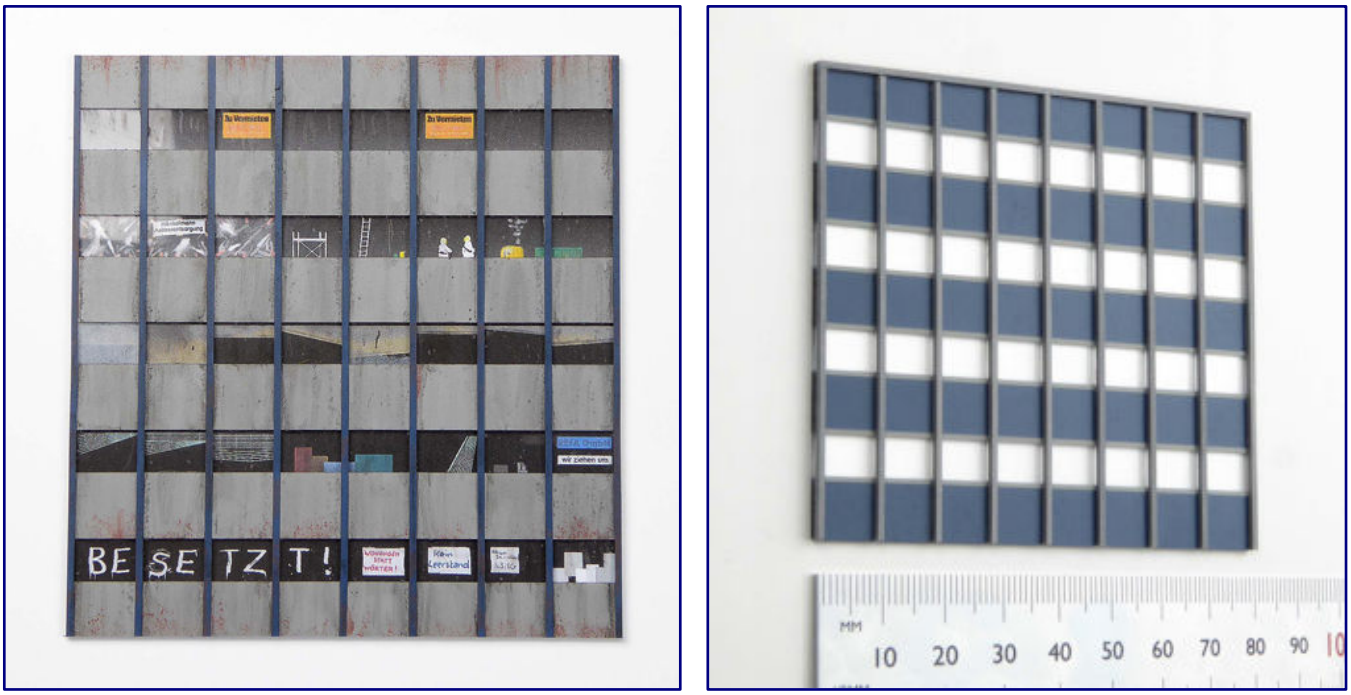
With a 45˚ mitre, the required overhang at each corner is the thickness of the strips. The wall is only actually cut to size once the adhesive has dried. The result is a wall of the kind that was common in 1970s office buildings and other functional buildings.

**continued on page 52**


**The modern houses of the 1950s modelled on prototypes from Stuttgart (photo above) show characteristic architecture. Vacant shops and the need for mobile phones, on the other hand, are characteristic of the present day. The plainly designed rear of the buildings should also not be forgotten (photo below).**

In my example, the glued-on strips are made of matt, brown polystyrene. If you are happy with a new building, this would be enough. However, many other variations are conceivable. A modern commercial district could be built relatively quickly, using the approach described above.

I would also like to suggest a third alternative for a little variety in the commercial district on the same basic pattern. Here, after cutting the lower blue layer, 1 mm wide grey strips were glued horizontally above and below the window openings. The continuous cut lines of the windows make it easy to position these strips.




**The design of a dirty façade and its 'interior life' (photo left), as well as a different façade structure (photo right), are shown here, as suggestions for design variations.**

The vertical lines were then cut all the way through, and the pieces of film thus separated were removed. Grey-coloured, 1 x 1 mm polystyrene strips were glued into the remaining cuts. Alternatively, the vinyl of the windows could only be removed after the strips had been glued on. In this case, the panes are still protected from swelling adhesive, but removing the remaining pieces proves to be trickier with this procedure.

An important note at this point: plastic adhesives for polystyrene hardly adhere to vinyl at all. If any glue runs off, it can therefore be carefully removed with the help of a blade. Of course, we could also engrave the window divisions before the strips are glued on.

The wall in front of us now looks like new, and that is also the case in reality. Grey foil and plastic strips are presented in a matt concrete colour. The blue fans, on the other hand, are deliberately not matt, but retain the silky lustre of the vinyl.

The choice of colour is important for the effect of a wall. In this case, I have chosen colours typical of the late fifties and sixties. Why don't you take a look around in a city near you? Even in modern building construction, there are characteristic features that refer to the period in which the respective building was built.

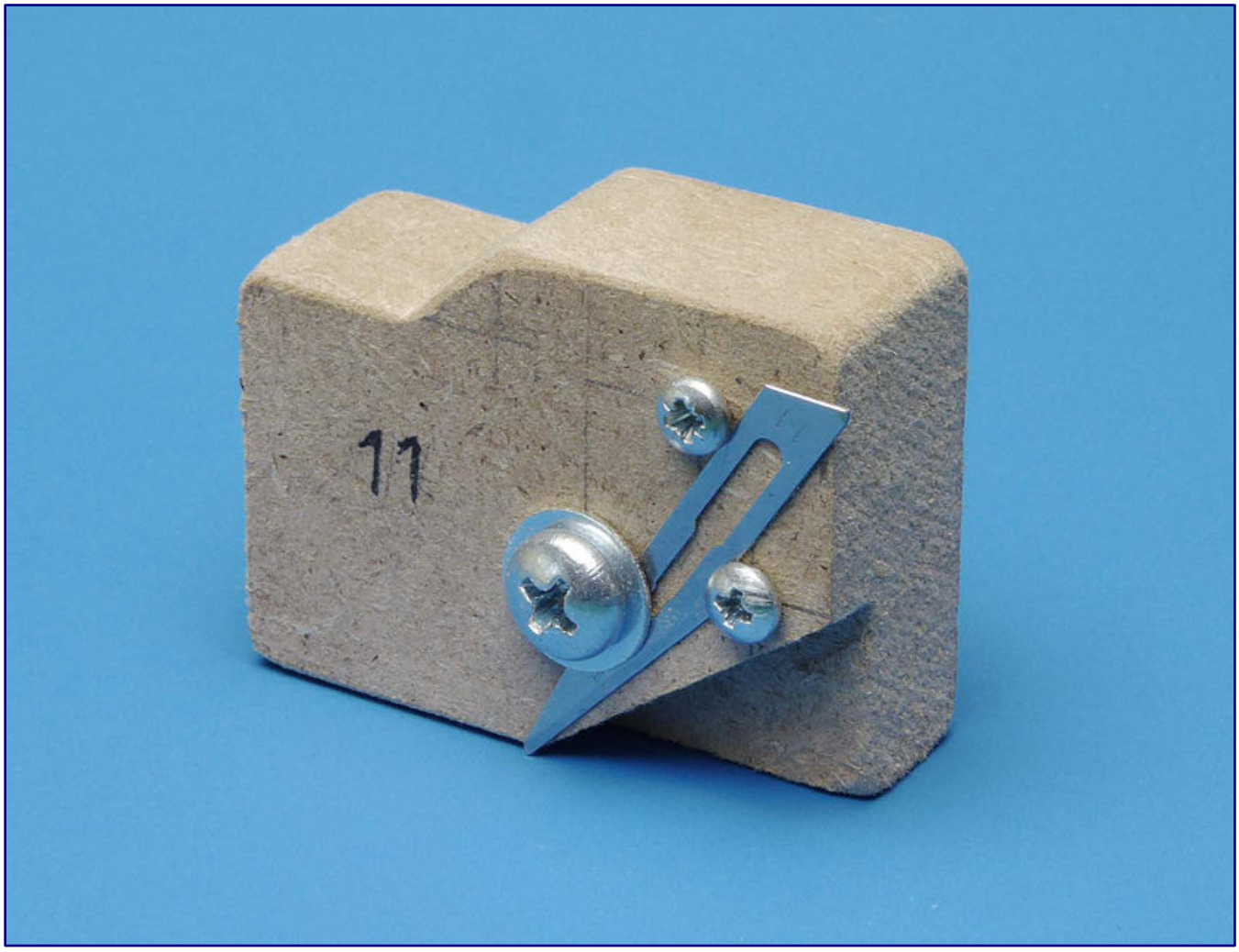
Let us now conclude this chapter by joining the walls together: Because there are vertical strips on their sides, we can butt-join the two models described. The only requirement is that the transparent base plate is not too thick.

## Tips and Tricks

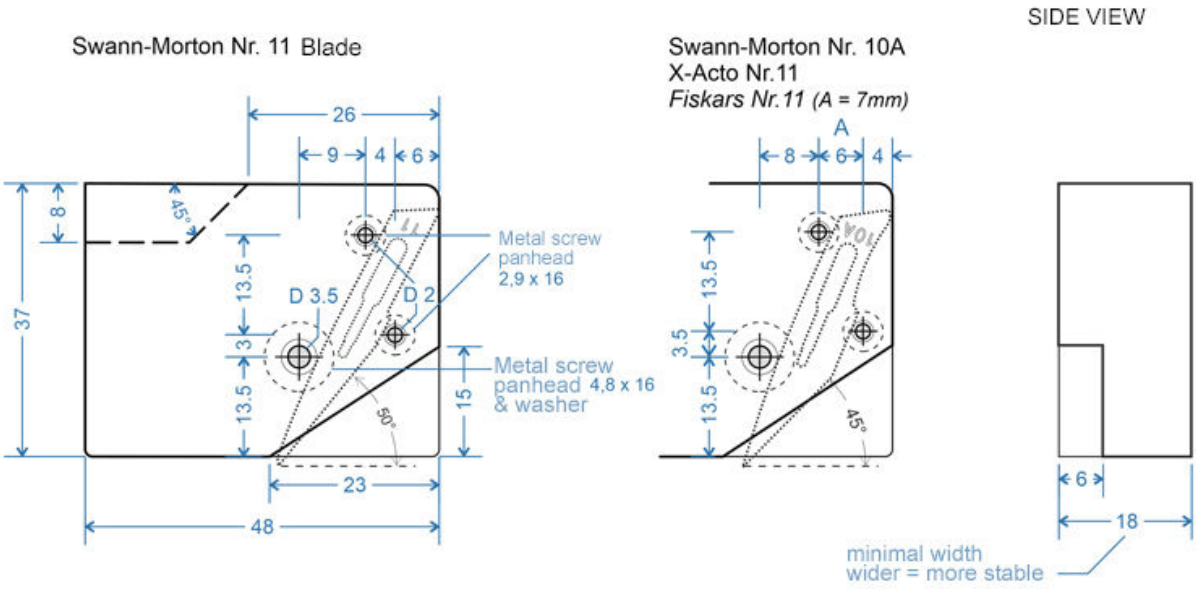
Despite practising, some of you may not be able to cut precisely to depth freehand. In this case, you can use a tool that I have developed for this purpose. It is deliberately kept simple. Left-handers simply create this tool in mirror image.

The base is a small block of 18 mm thick MDF. Plywood or real wood would be suitable alternatives. MDF is easy to work with and has soft edges that protect the material surface during the cutting process.

A slanted piece is removed from the raw block to ensure a good view of the cutting line when cutting. To do this, we saw it about 6 mm and remove the remaining piece with a hobby knife. The device fits better in the hand if the top left-hand corner is slightly deepened, see the dotted line on the left in the drawing on page 54.



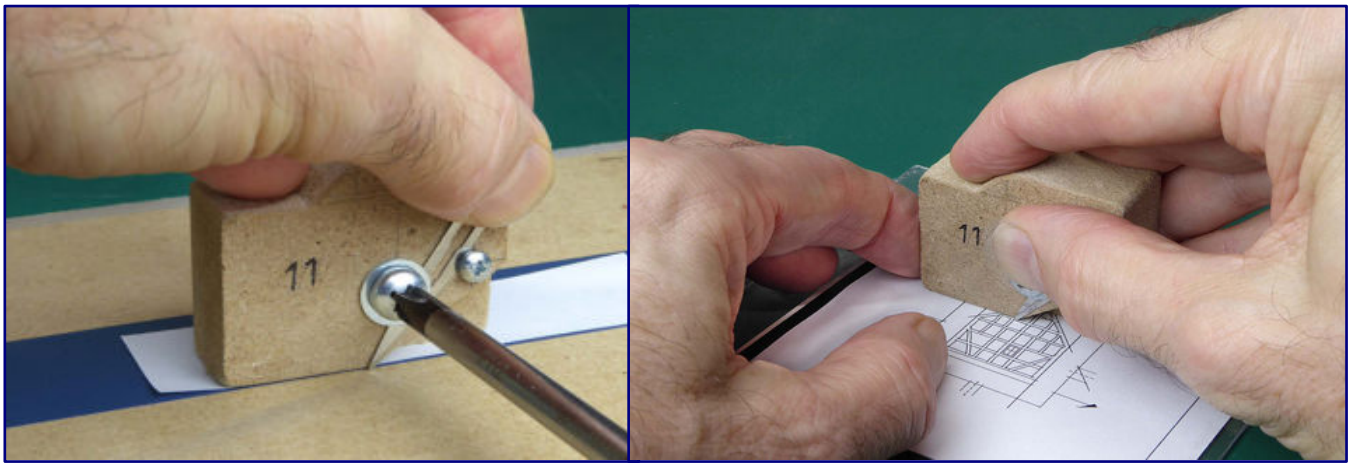
**Device for precise cutting depth in film**




A scalpel blade is then clamped onto the tool with three screws. I use self-tapping screws because they are ideal for this. Important: Pre-drill the holes and chamfer them. The position of the screws in my drawing is based on Swann-Morton scalpel blades No. 11. As alternatives, it also uses blades No. 10A, X-Acto No. 11, and Fiskars No. 11.

For other blades, the drawing would have to be modified individually. It is important that the cutting edge of the blade is not angled steeper than about 50˚. Otherwise, a glued drawing would be torn away during cutting. A more acute angle is more favourable, but also not less than 45˚ so as not to disturb the view of the cutting line.

To set the cutting depth, pieces of so many layers of film (or paper) are glued to a work surface that is gentle on the blade tip. We then position the tool so that the blade is just outside these layers. We then place the self-made auxiliary tool on these layers and then carefully press the blade down until it just touches the work surface.




**First, the depth is set on the self-made tool, then the fixing screw is tightened (photo left). Then the cutting can begin (photo right).**

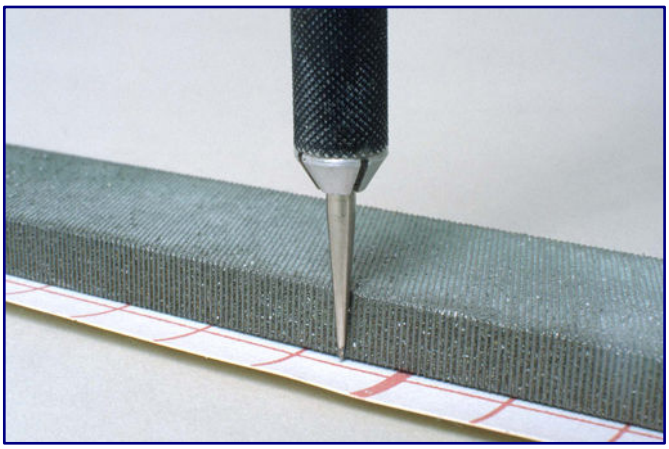
Now use the other hand to tighten the screws, starting with the large one at the bottom. A washer should be placed between the screw head and the blade, otherwise the blade would move when the screw is turned. The smaller screws at the top are only used for locking at the specified angle, but they can of course also be used for clamping.

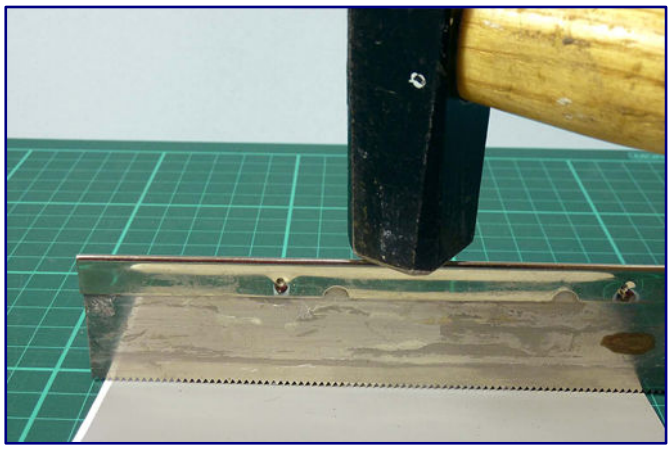
When cutting, it is important to ensure that our tool has a sufficient contact surface of around 30 mm around the object to be cut. We therefore need a larger excess of film than when cutting freehand.

It is also important to ensure that the cutting aid always lies flat and does not tilt. If you have problems with this, you should build a wider block. The most comfortable way to cut is with both hands, i.e., the right-hand guides and presses the device onto the surface, while the index finger of the left hand pushes the cutting tool forwards (information for right-handers). Of course, you can also cut along a ruler.

One advantage is that a drawing and vinyl layer can be cut at the same time without any risk, where without such an aid several cutting processes are often necessary. The disadvantage is that it requires more force and is more difficult to guide. My advice is to simply try it out for yourself because this useful tool costs next to nothing.

A second trick is to apply engravings along a line, for example to reproduce rows of rivets. Drawing or embossing such lines at equal intervals is difficult on our scale because even the slightest deviation leads to an irregular appearance.



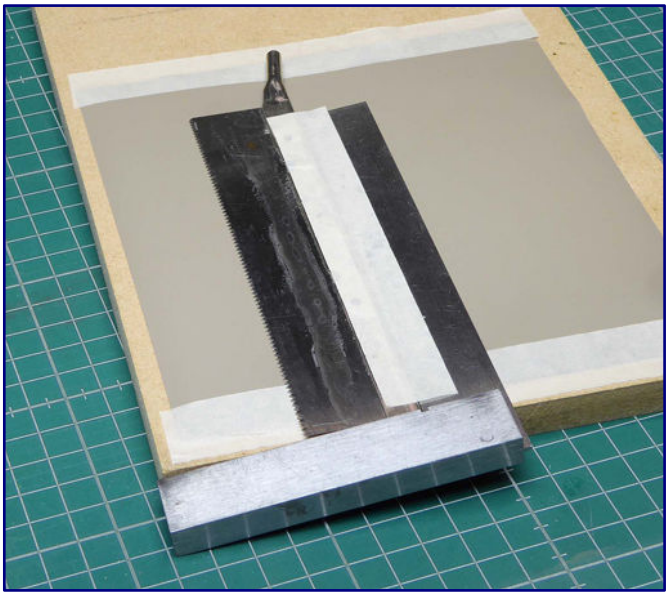


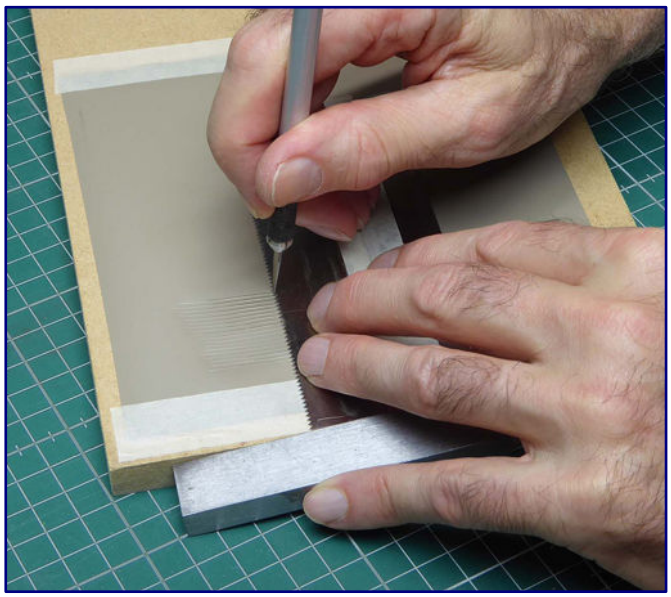
**The edge of a file serves as a guide for regular spacing (photo left), for longer lines we can also use the teeth of a saw blade (photo right).**

For dotted embossing (reproduction of rivets), the regular grooves in the side of a rectangular file blade provide a guide for the embossing needle. This creates a series of dots with regular spacing in a straight line. Their spacing depends on the selected file blade.

A saw blade with sharp teeth that is pressed or hammered into the material is suitable for simply marking points on vinyl at regular intervals. The marks left by the saw teeth can then be seen as reference points.

To engrave parallel lines, we stick the saw blade to an angle iron with strong adhesive tape. The vinyl is attached to a rectangular board and the angle is placed along one side of the board. A needle can then be inserted into the countersink between the teeth of the saw blade and pressed in. This allows several parallel lines to be engraved. If we also place the angle on the other side of the board, tile-like shapes are created.



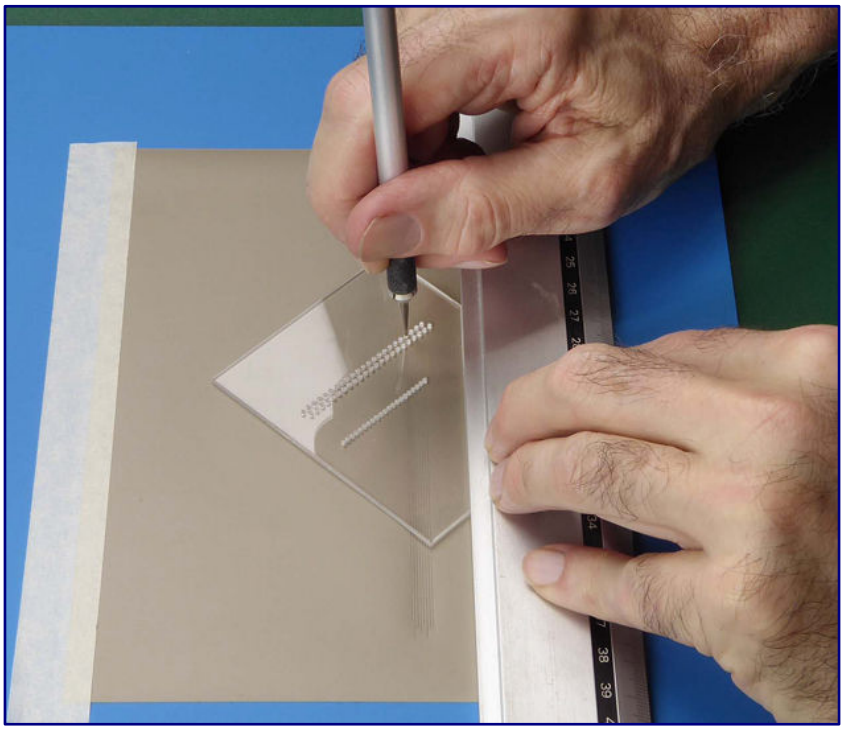


**Here, the saw blade is glued to a bracket and lies flat on the vinyl (photo left). Parallel lines can now be embossed evenly spaced with the graver (photo right).**

In the past, plastic stencils with regular holes were commercially available for hatching in drawings. These templates were guided along a ruler. If you have a bench drill with a cross table, you can make such a tool yourself.

To do this, a regular row of holes is drilled into a piece of thin material, for example a 1.5 mm thick acrylic sheet, as in my example. The diameter of the hole you choose depends on the needle you use.

In my case, 0.9 mm was optimal: The needle glides well, but there is not too much play. If the holes are close together, two or more staggered rows are drilled so that the template is not weakened too much.



**The hole template for parallel lines produced using a bench drill and cross table is also useful.**

Several line spacings can be embossed with one row of holes; to do this, the template must be guided at an angle. If the hole spacing is 1 mm, for example, an angle of 45˚ results in a line spacing of 0.71 mm. An angle of 30˚ results in a line spacing of 0.5 mm, and so on. These angles can also be applied to the template, e.g., mine has a side with 45˚.

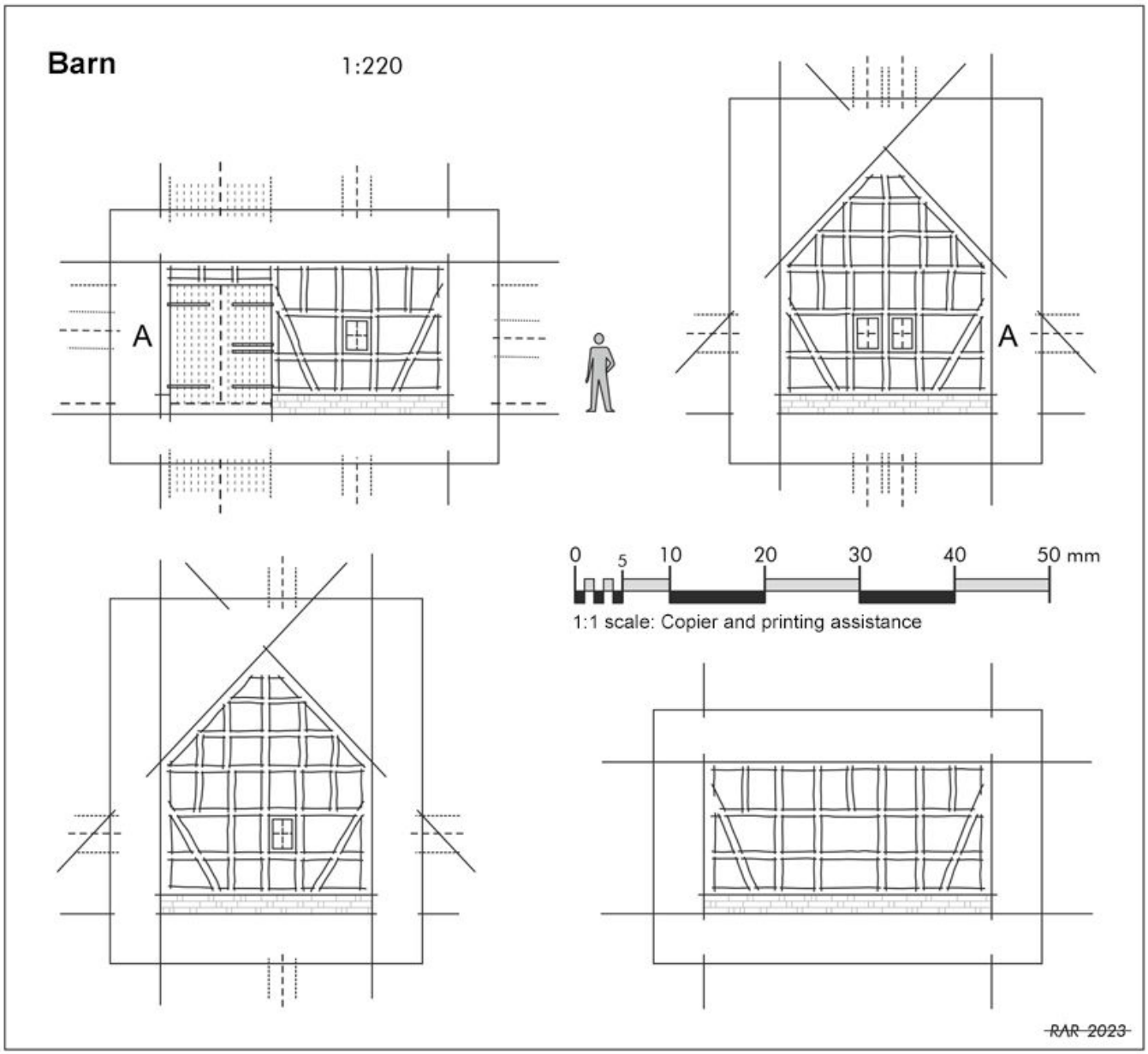
## Models to try

To conclude my short series, I would like to encourage you to try out the techniques presented and perhaps acquire new skills in this way. I have also prepared some suggestions that can serve as practice objects and subsequently enrich your layouts.

During a hike in the Siegtal valley, I photographed a barn that would be a good choice. It is easy to replicate because it only has a few windows. In addition, there is probably a place for it on every layout, whether as a workshop, garage, store, shed or barn. The working drawing fits on the cover of a CD case.

**continued on page 59**

**On the left we see a detailed version of the small barn, which is very close to the original. On the right is a simplified version with a roof made of embossed vinyl strips, without rain gutters, glued-on foundation stones and shutters.**




Roof
32,4 x 19 mm
2 x

To ensure that this can be printed or copied accurately to scale, I have included a scale that should correspond to the ruler. All the prints to be made for the various construction steps should be the same size!

The individual level of difficulty during construction can be chosen almost freely: For example, the foundation can be made from polystyrene strips to be glued on separately or left out completely. Walls can be mitred or butt-jointed.

The roof consists of two surfaces measuring approximately 32.5 x 19 mm, depending on the chosen material thickness and the desired roof overhang. The simplest implementation would be a 0.5 mm thick polystyrene panel, which is painted grey.

A polystyrene panel with vinyl strips glued to it is somewhat more ambitious. In the example shown, grooves were embossed into a grey piece of vinyl before strips were cut out of the material in a vertical direction. This creates the impression of a slate roof or, depending on the embossing and size of the strips, a roof with wooden panelling.

**The small chapel occupies a base area of just 15.6 x 14.2 mm on a scale of 1:220 and therefore remains a manageable task.**

Embossed polystyrene roof panels are available from Kibri under item no. 36920 (pantile roof), 36921 (plain tile roof) and 37971 (slate roof). There are also some suppliers who offer light-cut roof panels or embossed foil material (example: Redutex); this should be taken into account when selecting suitable adhesives.

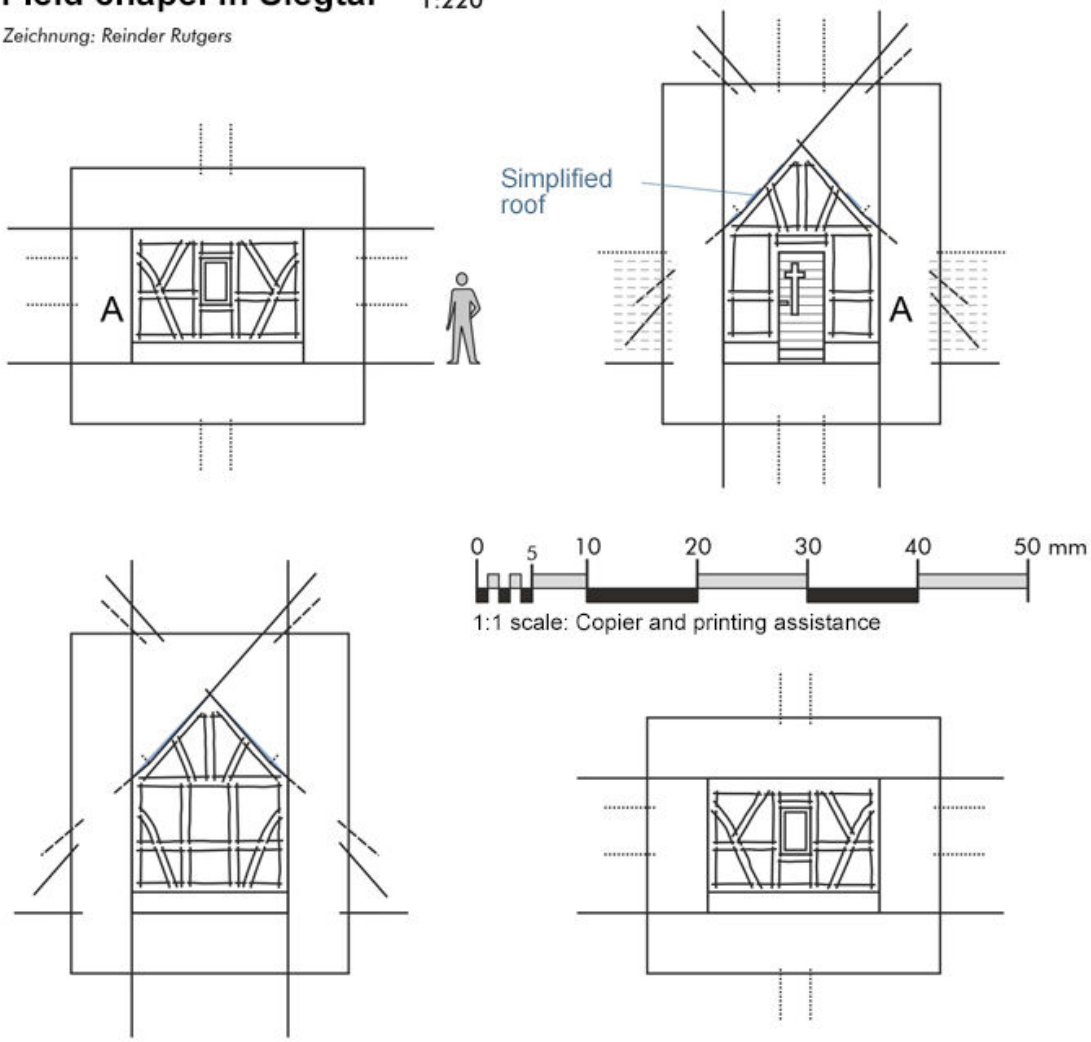
The model was weathered with a single coat of black wash, which requires very little effort. To show what is possible, I have also built a more elaborately detailed version as a model.

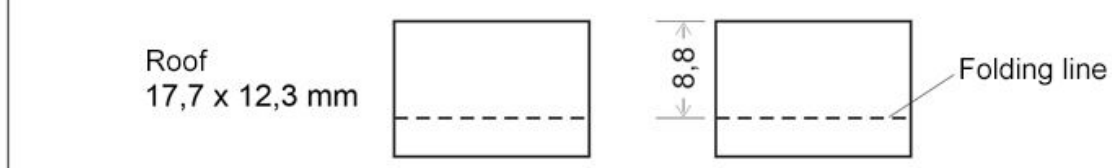
For those who want something a little more modest, there is a drawing of a small field chapel, whose prototype can also be found in the Siegtal valley. The model is so small that a 0.4 mm thick transparent polystyrene sheet (Evergreen; distributed by Faller) is sufficient for the construction.

The roof of the prototype has a small kink, which is optionally omitted to make the replica easier to build. Incidentally, the prototype did not have a cross on the roof but did have one on the door. Without a cross, it could also be a tool shed, a shelter for farm labourers, a ticket office or a gatekeeper's cottage. Here, too, you are free to personalise your design. I wish you lots of fun and good luck!

## Field chapel in Siegtal 1:220

*Zeichnung: Reinder Rutgers*




**Finally, we show the row of houses from Bad Urach again: particularly the rear of the buildings illustrates how easy it is to create facades with vinyl film. Although they are considerably less work than the front sides, the effect is quite appealing.**

Alle photos and drawings: Reinder Rutgers

**Sources of supply for tools and materials:**
https://www.amazon.de
https://www.conrad.de
https://.www.faller.de

https://www.gerstaecker.de
https://www.modulor.de
https://redutex.com
http://www.peter-post-werkzeuge.de

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

Rückblick auf eine Bahntochter

# Die Geschichte der DSG

***Hervorgegangen aus verschlagenen Teilen der Mitropa, existierte die DSG von 1950 bis 1993 als hundertprozentige Tochter der Bundesbahn. Lange Zeit war sie Eigentümerin von Schlaf- und Speisewagen, noch viel länger bewirtschaftete sie diese im Auftrag der DB. Dass ihr Tätigkeitsfeld aber viel größer und ihre Geschichte alles andere als geradlinig war, beleuchtet Armin Gärtner in seinem neuen Buch.***

**Armin Gärtner**
**Die Geschichte der Deutschen Schlafwagen- und Speisewagengesellschaft (DSG)**
**Band 1 – Vorgeschichte, Organisation und Tätigkeitsfelder**

**Eisenbahn- und Heimatmuseum Erkrath-Hochdahl e.V.**
**Erkrath 2024**

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Und er hat es wieder getan: Armin Gärtner, kompetenter Bahnhistoriker aus den Reihen des Eisenbahn- und Heimatmuseum Erkrath-Hochdahl e.V. (EHEH), ist nach seinen Werken zur Arbeitswelt der Siebziger und den Liegewagen noch tiefer in die Zeitgeschichte des deutschen Schienenwesens eingetaucht.

Dieses Mal hat er sich eingehend mit der Geschichte der Deutschen Schlafwagen- und Speisewagengesellschaft (DSG), einer hundertprozentigen Tochter des Deutschen Bundesbahn, befasst.

Wie auch die Mutter DB ist sie längst historisch und bestand von 1950 bis einschließlich 1993. Dann ging sie mit dem Privatisieren der Staatsbahnen in der Mitropa, ihrem in der DDR überlebenden Pendant und zugleich Vorgänger, auf, um schließlich gemeinsam mit ihr dann auch unter.

Dank ihres vielfältigen Geschäfts hatte einst jeder Bahnreisende Kontakt mit der DSG, Eisenbahnfreunden sollte sie wegen der auffälligen Anschriften an Speise- und Schlafwagen bestens bekannt sein.

Verblüffend ist, dass zu den Zeiten des Bestehens niemand ihre Geschichte aufgeschrieben hat und erst dreißig Jahre vergehen mussten, bevor diese Lücke absehbar geschlossen werden würde. Halt, es sind doch inzwischen 31 Jahre, oder nicht?

Richtig, doch bereits Ende 2023 kündigten wir im Rahmen eines Ausstellungsberichts diesen Titel an, sprachen mit dem Autor und zeigten unseren Leser eine Abbildung des heutigen Buchdeckels. Da waren

bereits viele Archivbestände durchforstet und ausgewertet, Texte geschrieben und es bedurfte nur noch eines Gegenlesens und Lektorats, bevor es in die entscheidende Phase gehen konnte.

Ende Mai, als der verlegende EHEH ein wichtiges Jubiläum feierte, war es dann soweit. Armin Gärtner stellte sein jüngstes und äußerst gelungenes Werk einem Kreis geladener Gäste vor. Zum Erstaunen einiger war nun unverkennbar vom Band 1 die Rede, die Reise wird also noch weitergehen.

Im vorliegenden Buch wirft er einen Blick zurück auf die Mitropa, ihr schwieriges Verhältnis zur CIWL/ISG und zeichnet die Folgen von zwei Weltkriegen nach, die als Trümmer eine Mitropa in Ostberlin und versprengte Unternehmensteile im Westen zurückließen.

Nicht schwer fallen dürfte es unseren Lesern, sich vorzustellen, welches Spannungsfeld sich daraus ergeben hat: In Deutschland stießen zwei Machtblöcke und unterschiedliche Wirtschaftsordnungen aufeinander. Hier erhob die in Berlin ansässige Mitropa wiederholt Anspruch auf ihren Firmenbesitz in den Westzonen.

Das war ganz und gar nicht im Interesse verbliebener Mitarbeiter und gewiss auch nicht der drei Besatzungsmächte. Doch auch diese hatten unterschiedliche Vorstellungen davon, was aus den Teilen der „alten“ Mitropa werden sollte.

Im amerikanischen Sektor erwuchs aus dem Erbe bald die Mitropa Direktion West, ein wichtiger Vorläufer der späteren DSG, aus deren Einflussfeld die Unternehmensgründung vorangetrieben wurde. Doch die Briten hatten längst noch andere Interessen, die Franzosen erst recht. So dauerte es bis 1950, bis die neue Gesellschaft als Tochter der selbst noch jungen DB aus der Taufe gehoben wurde.

Hier von einem guten „Wirtschaftskrimi“ zu sprechen, ist gewiss nicht weit herbeigeholt. Wir spüren die Spannung, die auch den Autor bei seinen Recherchen gepackt hat und so viel Material zu Tage gefördert hat, dass er nicht nur das eine, ursprünglich geplante Buch daraus erstellen wollte und konnte. Armin Gärtner hat dies erkennbar gewissenhaft und mit wissenschaftlichem Anspruch gemeistert.

In den Folgebänden sollen die einzelnen Jahrzehnte der Unternehmensgeschichte behandelt und vertieft werden. Der vorliegende Band 1 schafft zunächst die erforderliche Wissensbasis und erläutert vor allem Grundlagen und Organisation der Bahntochter.

Der Umfang der Tätigkeitsfelder beschränkte sich längst nicht auf das Bewirtschaften von Speise- und Schlafwagen. Selbst Spannungsfelder wie knappe Finanzen, spürbare Einflussnahme der DB und mehrere, teilweise sehr plötzliche Wechsel in der Geschäftsführung mit sich verändernden Schwerpunkten in der Ausrichtung werden systematisch beleuchtet.

Nicht ausgelassen werden zudem auch die versäumten Chancen Ende der achtziger Jahre, die das Ende der DSG vielleicht schon endgültig besiegelten. Formal kam es erst mit dem Aufgehen in der Mitropa zum Jahresbeginn 1994 – doch lange sollte es bis zum endgültigen „Ausverkauf“ auch nicht mehr dauern.

Viele Berührungspunkte zwischen den auffallenden Wagen und dem komplexen Geschäft dahinter werden jetzt transparent und nachvollziehbar. Auch die schwierige Aufgabe des Bebilderns hat der Autor gut und auch dank Hilfe Dritter gelöst.

Unser Fazit fällt knapp aus; Mit diesem Buch ist ein großer Wurf gelungen und eine überfällige Dokumentation der DSG-Geschichte erstellt worden. Daher nominieren wir diesen Titel für die Neuerscheinungen des Jahres 2024 in der Kategorie Literatur.

**Publishing pages:**
www.lokschuppen-hochdahl.de

Die Funktion der Ellok erklärt

# Ständig unter Spannung

***Vor zwei Monaten haben wir aus derselben Reihe den Band zur Diesellok vorgestellt. Heute folgt das Buch zur elektrischen Lokomotive, das viel Wissen aus dem Bereich der Physik voraussetzt, aber auch vermittelt. Ein „alter Schinken“ ist es ebenfalls nicht, auch wenn uns der Verlag wieder mal eine echte Neuheit glauben machen will.***

**Stefan Alkofer**
**So funktioniert die Elektrolok**

**Transpress Verlag**
**Stuttgart 2024**

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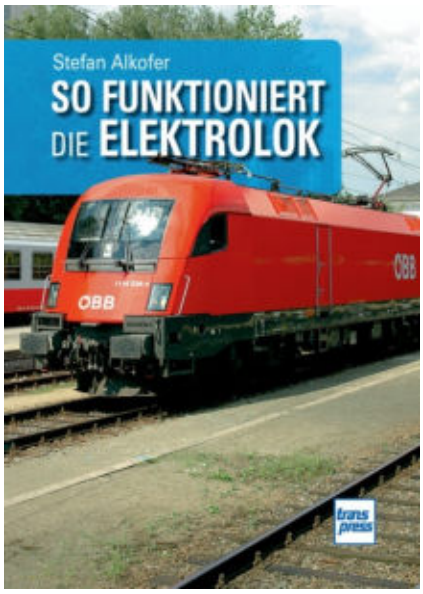


Fast ein Fazit ist es, was wir dieser Besprechung voranstellen: Vor uns liegt ein Buch, das angeblich neu sein will, aber es nicht ist, wie wir schnell feststellen durften. Es erschien mit identischem Inhalt bereits im Jahr 2007.

Hier wurde einfach der Buchdeckel unter Beibehalten des Hauptmotivs verändert, eine neue ISBN zugeteilt und das Werk als erste Auflage deklariert – eine klassische Mogelpackung, wie wir meinen. Doch ärgern werden sich darüber nur diejenigen, die das Buch schon im Regal stehen und bereits zugegriffen haben.

Für alle anderen, die an dieser Stelle noch eine literarische Lücke im heimischen Bibliotheksbestand erkennen, ist diese Rezension gedacht. Die Inhalte sind nämlich keineswegs überaltert und haben auch nichts von ihrem Reiz verloren, obwohl eine gewissenhafte Durchsicht vor dem Druck wünschenswert gewesen wäre.

Dies hätte die Chance eröffnet, einige Jahreszahlen und Passagen zu aktualisieren, die passenden Ansätze werden wir noch aufzeigen. Schon das hätte nach unserer Ansicht gereicht, um wirklich auf den Stand von heute zu gelangen. Und nebenbei wäre all denen, die es zum ersten Mal lesen, der 17 Jahre zurückliegende Ursprung dann nicht mal aufgefallen.

Wie schon erwähnt, beschränkt sich das Neue in diesem Werk auf die Gestaltung des Buchdeckels. Dass die Inhalte nicht frisch aus der Feder des Autors Stefan Alkofer – heute Chefredakteur des Modelleisenbahners – stammen, ist an zeitlichen Bezügen der Formulierungen immer wieder zu erkennen.

Auffallen wird es wohl jedem Bahnkenner spätestens, wenn die Rolle der Eurosprinter-Reihe mit dem Taurus als zeitgemäßer Baukasten hervorgehoben wird: Die Maschinen werden doch schon seit über zehn Jahren nicht mehr gebaut! Und was ist denn mit ihrem Nachfolger Vectron?

Der fehlt komplett, denn seine Produktion lief erst drei Jahre nach Erscheinen des Buches an - so einfach ist die Antwort. Auch an den angegebenen Standorten von Museumslokomotiven hat sich in all den Jahren einiges geändert; eine Maschine ist gar doppelt aufgeführt worden, was wohl bis heute unerkannt blieb.

Aber noch einmal: Es hat seit Abschluss der Arbeiten an den Inhalten keine nennenswerten Fortschritte gegeben, die auf das Beschreiben der Funktionsweise einer Ellok und ihrer Hauptbestandteile Auswirkungen gehabt hätten. Der Siemens Vectron muss also nicht in diesem Werk gezeigt werden, um aktuell zu bleiben. Wir freuen uns daher, dass die Reihe „So funktioniert…“ im Verlagsangebot verbleibt und vielleicht auch mit neuen Themen fortgeführt wird.

Gehen wir nun auf die Inhalte dieses Buchs ein: Diese beschränken sich nicht allein auf das Aufführen und Beschreiben von Bauteilen. Zunächst werden die Klassifizierungen von Elektrolokomotiven herausgearbeitet und auch ein Blick auf das moderne Bahnwesen geworfen, weil dies großen Einfluss auf die Entwicklung neuer Typen und deren Verbreitung hat.

Über einen historischen Abriss und physikalische Grundlagen wird erforderliches Wissen vermitteln, das zum Einordnen später folgender Informationen wichtig erscheint. Manchem Leser mag es da stellenweise zu sehr ans Eingemachte gehen, weil die Schulzeit zu lange zurückliegt oder Elektrophysik nicht zu den persönlichen Stärken zählt.

Aber auch, wer den Aufbau und die Funktionsweise eines Elektromotors oder Generators – beide Formen kommen in einer Lok vor – nicht vollständig versteht, muss die Lektüre nicht beiseitelegen. Selbst wer Probleme hat, scheinbar identische oder ähnliche Einheiten der Elektrik zu unterscheiden und gedanklich zu durchdringen, wird sich nicht durch Kapitel quälen müssen: Am Ende steht für jeden ein Wissensgewinn.

Bewusst möchte dieses Werk mit technischer Kompetenz antreten und zugleich für Laien verständlich erklären. Der Spagat, die einen nicht zu überfordern und abzuhängen, die Experten aber auch nicht zu langweilen, scheint geglückt.

Sie alle erkennen und vollziehen nach, dass der Elektroantrieb von Lokomotiven verschiedene physikalische Probleme vereinigt und Herausforderungen für die Ingenieure schafft. Sie waren und sind gefordert, bisweilen außergewöhnliche technologische Lösungen zu finden. Besonders deutlich wird das am eigentlich perfekt erscheinenden Drehstromantrieb, der heute Standard ist, seinen Anfang aber vor über 120 Jahren mit zahlreichen Fehlschlägen nahm.

Gut erklärt werden die zentralen Bauteile einer Elektrolok und deren Funktion. Das geschieht übergreifend für alle drei Stromarten und -systeme wie auch bewusst länderübergreifend. So reicht die behandelte Bandbreite von robuster Mechanik über den Siegeszug der Halbleiterelektronik bis zur modernen Computertechnik.

Auch Oberleitungs- und weitere Stromzuführungssysteme wie Sicherungstechniken bis zum aktuellen ETCS Level 2 hat der Autor im gebotenen Umfang integriert. Gut gefallen hat uns die Auswahl und Anzahl an begleitenden Fotografien und Zeichnungen, die ganze Fahrzeuge und wichtige Baugruppen oder Teile dokumentieren wie auch erklären.

**Publishing pages:**
https://www.motorbuch-versand.de

# SONDERAUSSTELLUNG
# KLEIN TRIFFT GROSS

50 Jahre Baugröße Z,1:220

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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 are in 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 sample is our goal. Likewise, here we note any events or meetings with significance to Z gauge reference, if we are informed in time.***

**Vinyl film construction arrives:**

(…) I've been working with the film and its derivatives since the mid-1980s: black backed façade parts (no more show-through), a brown timber frame on a bare gable wall, window crosses in all variations of white and much more.

Window frame lines around the wall opening (Kibri Z6803; 'École Bienne'), glass edges/edging from the outside lift in the glass shaft, a Migros market from the ground floor of the tower block (Märklin 8963), or an intercity hotel with Mitropa façade advertising from the whole tower block; Märklin 8610 with labelled tarpaulins.

Uwe Pfannenschmidt, Schluchsee


**Tarpaulin loads on low-sided wagons created with the help of vinyl film. Photo: Uwe Pfannenschmidt**

**Coal transport with WDW Full Throttle:**

William Dean Wright has introduced a new wagon pack under its Full Throttle brand (http://www.wdwfullthrottle.com). It contains two open 33-foot bulk goods wagons (item no. FT 2057-3) with visible box struts. They are labelled for the Rio Grande with new road numbers.


**The D&RGW is presented with a new wagon pack (item no. FT-2057-3). Photo: WDW Full Throttle**

The Denver & Rio Grande Western Railroad (DRGW) had an eventful operating history. It ran the highest main line in the United States through the Rocky Mountains. In 1988, its parent company took over the Southern Pacific Railraod and merged it with the Rio Grande.

As it was better known to shippers, the name Southern Pacific was retained for the new company. One of its main commercial activities was the transport of high-quality coal from the coalfields in Colorado and Utah. Its name finally disappeared in 1996 after it was taken over by the Union Pacific Railroad.

The new models, which are filled with coal cargo from Hay Brothers for this purpose, are reminiscent of this time.

**Special exhibition in extension:**
The special exhibition 'Small meets big,' which was conceived at the Black Forest Railway Museum (https://eisenbahnmuseum-schwarzwald.de) to mark the 50th anniversary of the Z gauge, is being extended. Due to the high demand and good visitor response, it has now been decided to extend it once again until 31 December 2024.

**The Black Forest Railway Museum is also worth a visit for its large collection of standard gauge 2 models.**

Anyone who has read our reports on this last year will know that a trip to Schramberg in the Württemberg part of the Black Forest is worthwhile. Thanks to the latest time addition, visitors who have not yet been able to combine a trip with a holiday or something else will now also have another chance.

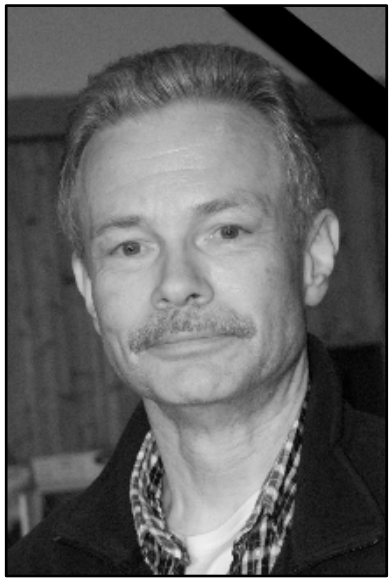
The next opportunity will be at the Märklin open day in September. On another day, a trip to the small Junghans watch town could be easily integrated.

**Obituary of a talented model railway enthusiast:**
On 28 July 2024, shortly before his 66th birthday, Harald Ruppelt passed away after a long illness. Harald was mainly dedicated to the H0 scale and had recently presented his well thought-out and skilfully built layout at Miba, which stretched his work over three parts. He was also a member of the model railway club in his home town of Krefeld.

However, he has also left lasting impressions in 1:220 scale. He successfully took part in the Trainini **Trainini Conversion Competition 2013** and took third place with the class 562-8 steam locomotive he created.

However, our readers will remember Harald above all for one of his Z-gauge projects: The ELNA tender steam locomotive of the Moselle railway, which can be seen on the biennial poster for the Advent meeting in Zell (Moselle) in front of the historic station building, is another of his successful self-built projects.

We'll also remember him as a knowledgeable and informative regulars' table mate with whom we were able to spend many wonderful hours enjoying the best hobby in the world.



**Harald Ruppelt († 28 July 2024)**

**Three Märklin deliveries:**

Märklin has put its Nuremberg 2024 exhibition locomotive on the market with the V 125 multi-purpose diesel locomotive (item no. 88211) from the Württembergische Eisenbahn Gesellschaft (WEG). Unlike its predecessors, the model for Era V is delivered in a regular box. Technically, the model is equipped in the familiar form of the class 212, the prototype once belonged to the somewhat weaker class 211 with slight deviations in the area of the longer front end.

Also travelling to customers is the DB heritage locomotive 044 389-5 (88976) set up in Altenbeken. This model largely reflects the condition of the steam locomotive before its recent restoration last year.

**Märklin has delivered the V 125 from WEG (item no. 88211), the Nuremberg exhibition locomotive 2024. The two black ventilation openings on the long front end make it a shape variant of the classic V 100.**

Märklin has now made the crosshead red instead of iron-coloured and nickel-plated the linkage to achieve the prototypical contrast to the darker wheel tyres. A plate welded onto the roof (to protect against rainwater penetration) and the raised coal box could not be included.

Shortly before this issue went to press, the ETA 150 battery railcar with the DB ESA 150 driving trailer (88250) was also delivered. This vehicle, painted in RAL 3004 purple red, is the Insider Club model 2023.

**Märklin is continuing the museum locomotive series with the 044 389-5 from Altenbeken (88976; photo above), while the ETA 150 battery-powered multiple unit with ESA 150 control car (88250; photo below) is the 2023 Insider Club model.**

The spontaneous enthusiasm for the harmonious and elaborately designed exterior also holds up during the first driving test. In summer it is a really successful model, which also makes us look forward to the train soon to be released for the regular catalogue range.

However, we also found some weaknesses and areas for improvement, as a test in the next issue will reveal.

**Archistories — New product for Ztrack:**
In addition to the classic ‘mail pouch’ barns, grain silos are also part of America's rural landscape. The wooden silo buildings with plank or corrugated iron facades tower high into the landscape.

**The grain silo, so typical of the USA, has been designed by Archistories for Ztrack in two variants and a total of five colour versions. Shown here is the red board wall version (item no. 704241). Photo: Archistories**

Such buildings are now available in various colours via Archistories. They are exclusively available at the Ztrack Centre (https://ztrackcenter.com). The main building has three optional extensions that can be arranged individually: an access road for lorries delivering grain, a small warehouse with loading ramps on both sides for rail or road and a small office extension.

The grain silo is available in the colours white (item no. 701241) and grey (702241) for the corrugated sheet metal structure, and sand (703241), red (704241), and olive green (705241) for the board look.

**Great success in "social media":**
In August, our **Trainini Lokdoktor** Michael Etz reported that the Facebook group **Trainini®** had reached an incredible 4,000 members! The mark of 2,000 registered users had only been exceeded in December 2023.

Within just eight months, the number of registered participants has doubled again. Many exciting modelling topics are discussed there, naturally with a narrow focus on Z gauge.

Direct contact with the editors is only possible to a limited extent, at best, as the majority of them cannot also be represented there due to time constraints in view of the division of tasks relating to the magazine and the film channel.

Interested parties who would like to join this licensed group can find the contact via an entry in our imprint of all magazine issues.

**Addition of the 1zu220-Shop:**
Anyone who orders their Märklin club model for Z gauge from the 1zu220-shop has received a free extra for several years now. For model 2023, the ETA / ESA 150 battery-powered railcar, this is a lorry Magirus-Deutz Mercur 120 with flatbed and tarpaulin, painted to RAL 7021 black-grey in the colour scheme of the German Federal Railways at the time. The tarpaulin has been given a light brown leather colour.

**This Magirus-Deutz Mercur 120 with flatbed and tarpaulin, including a driver figure from Trafofuchs is an addition from the 1zu220-shop to the Märklin Insider Club model 2022 in Z gauge.**

The basic model was produced by EtchIT-Modellbau and was completed by Trafofuchs, who also added a driver figure. In this way, all three parties have contributed to actively counteracting the lack of guided motor vehicles on a scale of 1:220.

**AZL for August 2024:**
The EMD SD50 of the Missouri Pacific (item no. 65008-1 / -2) is presented as a shape variant in the colours of the Union Pacific. This livery dates from the 1980s when the railway company was to be merged into Union Pacific. The EMD SD40-2 bears the colours and lettering as well as operating features of the MKT (64214-1 / -2), while the EMD SD40T tunnel locomotive of the NYS&W Susquehanna (64106-1 / -2).



**EMD SD50 of the Missouri Pacific (item no. 65008-1; photo left) in the colours of the Union Pacific and 4180 compressed air unloading wagon of the Great Northern (916031-1; photo right). Photos: AZL / Ztrack**

The 4180 compressed air unloading wagons are being offered this month in the blue colours of the Great Northern. A four-pack (906001-1) and a two-pack (916031-1) are available. Two two-packs (905357-1 / -2) of Ortner bulk freight wagons are running for the DJJ (JTSX). They are joined by the TTX wide-view goods train escort car (921026).

Photos of all new products can be viewed at https://www.americanzline.com.

**Autumn new products at Nothaft:**
Modellbahndecals Andreas Nothaft (https://www.modellbahndecals.de) has presented its new autumn 2024 products, which are available immediately. They are available for N to 1 gauge, and, on request, in any other scale including Z gauge. However, not all of them can be used for regular models in this scale, as there are no exactly matching conversions available.

However, the Austrian traffic signs divided into several sheets (art. nos. 111, 113 & 115) are certainly of interest. They are available as waterslide decals or self-adhesive (112 / 114 / 116).

The Minol logos (5454) from the former GDR are also offered, now also on a sheet including the Minol Priol as the company's mascot. Ermewa 71.4 hl tank wagons can now be labelled in three variants (6697 - 6699) for the hydrogen fluoride load. These labelling sets belong to Era VI.

The series of SBB emblem locomotives is also being continued. It is now the turn of the ‘Interlaken’ locomotive (11629). Representing 14 BLS Re 4/4 series locomotives, there are now also matching names and road numbers (11169).

**ZFI annual car 2022:**
No, it's not a spelling mistake – Z-Freunde International e.V. managed to present and offer their 2022 annual car shortly after the middle of 2024. The model can now also be freely ordered from the 1zu220 shop (https://www.1zu220-shop.de) after initially having to wait several months for instructions from the association.

**The Bayern-Bahn Ts 851 (item no. 98203) sliding roof car for the current epochs V / VI is the ZFI annual car 2022, which is now available. On our web portal pages you can see the other, differently printed side of the car in a message.**

The protagonists have selected a Ts 851 (item no. 98203) sliding roof car from the former Bundesbahn stock (originally designated as Kmmks 51). It is classified with the Bayern-Bahn and can be categorised as Era V / VI. The model, produced in an edition of 200 units, is painted in RAL 8012 red-brown and has touch-up spots in the colour RAL 3002 carmine red.

**Laffont new products available:**
The range from Modellbau Laffont (https://modellbau-laffont.com) continues to grow. Following Stephan Laffont's holiday, three new products are now available. First of all, there is the single-track and single-stall engine shed (item no. Z9301) in half-timbered look for parking steam locomotives on a branch line at night.

The small turntable (Z9101) can also be used there to turn machines. The dummy is supplied without tracks and is not powered, but its platform can be turned by hand, if built accordingly. Five track exits at an angle of 15˚ are provided, but further exits at any angle are possible with simple cuts.

Finely engraved chequer plates can be seen in the platform area, five chequer plates for the exits are included, surrounded by four irregularly engraved wooden plank transitions. The pit shows a brick engraving and accommodates the 87 mm long platform, the ring measures 110 mm on the outside (standard track length from Märklin).

**The single locomotive shed (item no. Z9301; left) and the small turntable (Z9101) are part of the current deliveries from Modellbau Laffont.**

The Essingen market gate (Z9501; see photo on next page), a town gate with a weathercock from the Altmühltal valley, is part of the old town centre. It has plastered surfaces, a rear staircase with wooden panelling and fine roof engravings. The gateway is 17 mm high and 15 mm wide.

**Another award for the Miwula:**
The Miniature Wonderland in Hamburg has been named Germany's favourite attraction for the sixth time. It once again left well-known sights such as Neuschwanstein Castle in its wake.

**The Essingen market gate (Z9501) is an enhancement for any old town scene.**

More than 25,000 people from various countries took part in the German National Tourist Board's (GNTB) tourism poll, putting the world's largest model railway on the winner's podium for the sixth time in the last seven polls.

**Shortly before the editorial deadline:**
The model became known as an open wagon of the type Omm 55, but also spread as a UIC standard wagon in a similar form on other European railways. The 1zu220 shop (https://www.1zu220-shop.de) has now had this model produced for itself as a special FR wagon in a one-off edition of 27 packs by the Uwe Schuster assembly service.

The model for the two brown cars in the set (item no. 352.335.02) is the type Es of the Luxembourg State Railways CFL. They are painted completely brown, as was once customary in France. This means that even the running gear and buffers are not painted black. The wagons, which can be used throughout Europe using the RIV method, break up the photo familiar from Germany in an appealing way.

**The UIC standard wagons corresponding to the German Omm 55 / Es 040 are a special series for the 1zu220 shop as a CFL variant (item no. 352.335.02). Photo: 1zu220-Shop | Jörg Erkel**

**No Eurospoor 2024 in Utrecht:**
Eurospoor will not take place in Utrecht in the Netherlands in 2024 either. The organiser states on its website that there are still too many uncertainties regarding price fluctuations and increases for an international exhibition of this size. In this context, explicit reference is also made to the uncertainties resulting from the ongoing Russian war of aggression against Ukraine.

The organiser information can be found at the following address: https://eurospoor.nl/en/visitors/show-information/unfortunately-no-eurospoor-for-the-time-being/.

**Herpa Wings for the start of autumn:**
The company Herpa from Dietenhofen in Franconia is celebrating its 75th anniversary this year. This is also the focus of the new 1:200 scale aircraft models announced for September and October. We have once again selected those models that are suitable for layouts based on German and continental European models:

Finnair ATR-72-500 (Art.-Nr. 573306),
Iberia Regional ATR-72-600 (573313), and
German Airways Embraer E190 “Herpa 75 Years” (573221).


**Herpa's anniversary labelling is also applied to the original of the new product, the Embraer E190 of German Airways (item no. 573221). Photo: Herpa**

In the simplified Snapfit models with retracted chassis, the following models are new in the simplified Snapfit models with retracted wheels, the following models are new:

Condor Boeing 757-300 “Passion” (613606-001),
Condor Airbus A330-900neo “Sea” (614283), and
Eurowings Airbus A319 “Steiermark” (614375).

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