

# 012-EXPRESS

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**NOTE to Readers:**

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**Editorial**

Header:

**Dear Readers**

The motto „Off to New Shores“ in our last issue we have once again taken literally and adventured ourselves on the high seas. It is wonderful to enjoy the bright blue sky and the souging of the wind in the face. At the sight of the island, the Germans do like best, and the beating yachts we do feel a certain pride by speeding up our own decent jolly-boat – always close-hauled!

Completely “jazzed” was the minority tenor to our editorial in the last issue. With a joyful surprise we perceived that so much attention is given to this part of our magazine. Questions like what our hobby has in common with violation of human rights at least showed, that we achieved one aim: making you think. In all cases we do re-enact historical sceneries on our model railway layout. It is irrelevant, if they are arising from fantasy or reality. If we take the chance of going one step further back and remember the railway constructional events in America. Or are they merely arising from make-believe in celluloid strips? Among the most famous of them undoubtedly is the work of Sergio Leone “Once Upon a Time in the West”. Once again it was the element water, which played the major role. But anyone who was foolish enough by trying to profit from the elixir of steam locos, could not bargain for a long life. It’s a good thing that distinct laws for such a thing do exist nowadays!

So we bury the hatchet and dedicate ourselves again to the current events around our hobby. The one who is able to hold a candle was, according to media, fiercely debated at the market-leader. The reason why Managing Director Axel Dietz from Märklin finally had to resign is beyond our knowledge. Since we have not received any first hand information we will not let ourselves carried away with discussions about this subject and surely will not rush into the apparently common practice of summery lousy play. We proudly can say that we are not in need of stopgaps. In fact we are bitterly hit, if in the run-up already announced articles are discarded for editorial reasons. This also happened in the current issue. Unfortunately, we have to postpone the long-awaited article concerning modification of the Märklin “glass-box” in Gauge 1 to the December edition. Such circumstances surely are not understandable for all of you and we do acknowledge this. However, expanding a magazine by some more pages, just like this, as some readers suggested, does not work in practice.

Therefore a long-termed planning is required including the necessary investments. And higher costs inevitably will lead to a price adjustment, which we want to avoid as long as possible. This surely will meet your approval. We do regard the publishing of the 012-Express as a part of our model railway hobby. In no case we want to dissociate from this basic idea and retain the muse of creating a remarkable magazine further on. Anyone who has had the opportunity of observing us while taking pictures or discussing with traders, manufacturers or hobby comrades on exhibitions and fairs will know how much pleasure we take in our work.

And we were glad to see that apparently also the market-leader changed his mind and turned for the better in being present with an own stand at the Gauge 1 Meeting in Sinsheim. The Large Gauge segment seems to play an important role for the company Märklin, which also is obvious by reading the customers letter, where recently their new track system and the one, which was taken over from Hübner was introduced. What else was new in Sinsheim, we

summarized in the category “Showcase”, as usual. The fair report (and all the other novelties) is also worth a look for all Non Gauge 1 Modellers: meanwhile many manufacturers are offering their Gauge 1 components for other large Gauges, too.

Also in the category Modelling we again have prepared some generally applicable delicacies for you – in spite of the missing “glass-box” modification article. One highlight certainly is the report on the step-by-step building of a small coaling crane.

How a not at all ordinary model is being implemented in Gauge 0 is described in the report of building the “S9”. Two spectacular loco types are documented in our tests: the “Hercules” in Gauge 0 by DEMKO and the SNCF 140 C as a live-steam model by Aster.

Another part of our report on the systematically building of bridges is about the correct construction and the mounting of counter bearings as well as the implementation to a model in a scale of 1:22,5. – This topic surely is not only interesting for techies! Well known to the latter: the benefits of servomotors at model railway layouts. We are offering practical advice on purchasing and application on the model.

How original samples are being implemented into a model is reported in three modelling railway and diorama articles. Perhaps some of you will thereby think of your summer holidays. The building of a diorama absolutely can contribute to successful holidays, which clearly is documented in our “Holiday Express” – and no one needs to get lost in the basement ... you cannot imagine the quantity of sweat, despite the fresh breeze – what a delightful hobby!

Yours sincerely

Wolfgang Oelrich

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**Sinsheim:**

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**Showcase**

Bar:

Newly discovered for All Large Gauge enthusiasts

Header:

**The Summer Novelties**

Introduction:

What the manufacturers have to offer to us Large Gauge Modellers besides the Gauge 1 novelties from Sinsheim, you will find on the following pages.

#### **Benecken**

Gauge 1: Shortly after the exhibition in Sinsheim, the BR 151 for Epoch IV came out. The body of the “long beauty” consists of plastic with brass cast parts and the chassis is made from stainless steel. It is powered by separate engine, which run all four axles. The loco is equipped with an ESU-XL sound decoder, a driver and an interior decoration of the engine compartment. The minimum radius is 1020mm.

Info: [www.benecken-modellbau.de](http://www.benecken-modellbau.de)

#### **CMM - TOPPMODELL**

Gauge 0: Since September the company cmm is operating under a new name: TOPPMODELL is the name of the brand, where all products now are sold by.

New in the range of cmm are laser graved cardboard kits in a scale of 1:45. Towards the end of the last quarter this year additionally a small-town reception building and a signal tower are available.

Info: [www.topmodell.de](http://www.topmodell.de)

#### **Lotus Lokstation**

Gauge 2m: Available as a kit or as finished model, Lotus provides a water crane according to the original at the Steyrtalbahn, like it was to be found on almost every ÖBB route.

The base plate of the model consists of a resin cast part, so it can be used outdoor without any problem. The water crane itself is made from white metal and brass as well as brass pipes. The outlet pipe and its outlet hopper are swivel-mounted.

On the basis of the instruction manual the parts can be mounted and glued easily.

Now available are the sleds, according to the Swiss originals, which were presented in Nürnberg.

Info: [www.lotuslok.at](http://www.lotuslok.at)

#### **Märklin**

Gauge 1: With a big poster campaign Märklin calls attention to the extended range of tracks. The entire Hübner range, including the new track geometry, has been taken over by Märklin and is available now. For ease of orientation Märklin also added the original Hübner order numbers on tracks and switches.

Info: [www.maerklin.de](http://www.maerklin.de)

**Minitec**

Gauge 0, 1: Using a new production method improved the quality of track gravel made from greywacke, grandiorit and rhiolyth a lot. Numerous cleaning and drying processes made the gravel free from loose and adhering dust. A darkening of the gravel after gluing will so be minimized. The range is available in two exactly true to scale classes of grit.

Info: [www.minitec24.de](http://www.minitec24.de)

**Modellbau Freiburg**

Gauge 0, 1, 2: The very fine particles mixture of “clay”, dolosit” and “alpine-dolomite” are particularly suitable for imitating plaster facades and for filling framework framings. For natural soil “loess” and “sand” are offered.

Gauge 0: For Lenz modellers brown gravel bedding was developed, which is available in different sizes.

Info: [www.modellbau-freiburg.de](http://www.modellbau-freiburg.de)

**MSM Peter Lehmann**

Gauge 1: The track library of the widespread planning software WinRail now offers switches and track figures of the company MSM. The digital components are available for download from: [www.winrail.de](http://www.winrail.de). So further switch figures for planning are available for the ambitious module and layout builder.

Info: [www.spur1.at](http://www.spur1.at)

**Paulo**

A number of useful “small stuff” comes from Ahrensburg.

Gauge 0: The previously announced high wood storage is now available.

Gauge 0,1: A small bridge with white wooden guardrails and a wooden pavement; a floating duck house; the plaited and illuminated Sh2 safety stop signal with kerosene lamp; information panels with white wooden framing and a shingle roof.

Gauge 1: Tubular steel chairs with synthetic-leather covering and a wooden doghouse.

Gauge 0,1,2: Boarding aids for passenger trains at railway platforms, which are delivered pair-wise.

Info: [www.paulo.de](http://www.paulo.de)

**Schuco**

Gauge 0: New at the Classic Collection (1:43) is the MB L322 as a beer truck of the “Löwenbräu” brewery. The vehicle in authentic blue is loaded with several crates of beer. As another utility vehicle now the Hanomag Garant will come out. The 2,5 ton forward-control vehicle was produced since August 1959. The engine with 2,8l and 65hp later was exchanged with a Borgward engine and its 3331ccm and 70hp.

Also new is the Opel “Manta B” with white painting and the typical black plastic roof covering – resourceful model builders surely will not miss the chance of adding the necessary “elbow-leaning-out-person and the typical foxtail”.

Info: [www.schuco.de](http://www.schuco.de)

**Silflor**

Gauge 0,1: A double-trunked broad-leaved tree with a height of 38cm as well as a beautifully executed poplar (height 35cm) with its summer or early fall foliage is new at the range of the landscaping specialists.

Info: [www.silflor.de](http://www.silflor.de)

### **Wenz**

Gauge 0: The new Ore-Car-kits for layouts according to American examples and its rich gold mines were taken from an original in Durango, which is used for mining in the western areas of the country for decades.

For building the track in Gauge 0 according to a German model the range was widened with an etched parts kit, an Indusi with two terminal boxes, which are as essential as the also new rail for mounting frames on the signal positions.

Now the light signals are also available as finished models, in the near future also the mechanical signals from the company Weinert will again be available as finished models and mounted by the company Lenz.

The DBs overhead contact line system has reached the final development phase and will be available in autumn, as well as the already announced DB barrier with hangings.

**Info: [www.wenz-modellbau.com](http://www.wenz-modellbau.com)**

### **Zimo**

Gauge 2: Under the designation „Zimo Easy Line Kit“ the electronics specialist offers a conversion kit for LGB locos. It includes the major rail sound decoder MX690V, a broadband speaker, a steam generator with fan as well as the necessary adapter and cable connections. This means, now the various Zimo sound features and a wheel synchronic steam development is available for all LGB locos

**Info: [www.zimo.at](http://www.zimo.at)**

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Category:

**Showcase**

Bar:

**Gauge 1-Meeting 2008**

Header:

**Late Harvest in Sinsheim**

Introduction:

**As always at the end of June all Gauge 1 enthusiasts are pilgrimaging to Sinsheim – this is our report about the most important meeting of the scene**

Author: Wolfgang Oellrich

Pictures: Manfred Weihrauch

Although FOOTBAAL meanwhile comes really high in Sinsheim and the surrounding area, on the 28<sup>th</sup> and 29<sup>th</sup> of June this year all model railway enthusiasts – especially the Large Gauge modellers – only had one thought in their mind “Let’s go to Sinsheim!” After all, this 19<sup>th</sup> Gauge 1 meeting is the big event and all members of the scene were looking forward to, full of expectation.

And so the organiser, the “Auto- und Technik Museum”, once again was satisfied. The interesting exhibition program fulfilled the needs of the large number of visitors during the two exhibition days. Because this time almost all of them were represented, the manufacturers of vehicles and equipment on a scale of 1:32 as well as the large number of dealers, offering their, partly eagerly awaited, novelties. And also the leader in the field distinguishes himself by his physical presence.

Correspondingly highly frequented were not only the stands but also the large crowds that gathered at the large Gauge 1 layout of the “Gauge 1 Freunde Württemberg” was enormous. On the very attractive layout the latest models could be experienced “in motion”. The various lovingly designed sceneries fascinated the visitors again and again. But also the smaller dioramas, shown by some exhibitors, were inviting the visitors to stay and talk stop.

This year the complete extension tent was dedicated to the “Life Steamers”. Obviously this sector seems to catch on more and more. As a matter of fact our Large Gauge hobby is growing, which is impressively documented by the increasing number of providers for both, vehicles and equipment. Well then! Let us take a look at what the manufacturers have to offer! Our special thanks are going to the “Gauge 1 Freunde Württemberg”, who provided us with their layout and its collection of novelties from the Sinsheim exhibition in order to take pictures.

**Picture Headers:**

<b>Text</b>
The mighty Reiter signal tower is a self construction of the “Gauge 1 Freunde Württemberg”
A diorama of a locomotive garage by “H.O.T.-Modellbau”: is any tool missing?
Impressions of the “Württemberg” Gauge 1 layout: each module is including an eye-candy and, what really takes the biscuit, surely is the Bw with its large ringloco shed

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Category:

**Showcase**

**(Sinsheim Continuation)**

**Aho-Modellbau**

Gauge 0, 1, 2: The company Tillwich provides space flight approved high-quality lubricants. The Locomotive grease B 52 is high-precision grease for model railways and, amongst others it is characterized by its high stability. Distribution by Michael Acker, Bamberg. ([www.aho-modellbau.de](http://www.aho-modellbau.de))

Info: [www.lokfett.com](http://www.lokfett.com)

**Annaberger Modellbahnen**

Gauge 1: The range of hand painted tin figures was extended again. Brand-new is the “naked child at number two” as well as the scooter “Pitty” and his driver, which was famous in eastern Germany.

Gauge 1e: New in the sale is an automatic middle buffer coupling for narrow Gauge vehicles.

Info: [www.modellbahnland-erzgebirge.de](http://www.modellbahnland-erzgebirge.de)

**ASOA**

Gauge 1: Mr. Holl offers a beautiful equipment detail, a “Hildebrand/Knorri” braking valve, like it was to be found on many freight wagons, for example on the Oppeln, Bremen, Leipzig, Villach, Linz etc. and on two-axle and four-axle standard tank wagons.

The fleet of U.S. vehicles was enlarged with a Dodge and various Ford-Pickups. Also the famous TT-model is among them.

Gauge 0, 1: Also interesting are the carrier boxes made from robust plywood, they are suitable for Gauge 1 as well as for Gauge 0 vehicles and wagons.

Info: [www.asoa.de](http://www.asoa.de)

**Aster**

Gauge 1: Mr. Twerenboldt and his team come up with a special treat for all live-steam fans: the giant US-S2 of the Great Northern Railway was announced as a novelty. As always, the model will be available as a kit and as a finished model.

Info: [www.astereuropa.com](http://www.astereuropa.com)

**Besig**

Gauge 1: The delicate auxiliary signals for slow approach, which were presented in Nürnberg as samples, are now available, including lanterns.

Info: [www.besiggmbh.de](http://www.besiggmbh.de)

**Bockholt**

Gauge 1: The excellent model of the E75 is now completed. For the year 2009 the BR 18, the Saxon XVII H was announced.

Also new is the contact wire according to a Swiss model and lamps for platforms and the stations movement area.

A variable rectangular shed with a roof is available on request.

Info: [www.bockholt.de](http://www.bockholt.de)

### **DEMKO**

Gauge 1: First samples of the Gauge 1 versions of the Dispolok ER20 were exhibited in Sinsheim. The locos are available in different variations and with or without decoder (please see our test report of the Gauge 0 loco in this issue).

Info: [www.demko.de](http://www.demko.de)

### **Dingler**

Gauge 1: A first sample of series 02 was introduced at the stand of Ottmar Lippert. The loco is going to be delivered over the course of the year 2009.

Info: [www.dingler.de](http://www.dingler.de)

### **Fulgurex**

Gauge 1: The A/e 3/6 will be delivered this year. 5 variations of the SBB/CFF loco will be offered. The small series loco offers excellent detailing, like usual at Fulgurex. A total of only 50 copies will be manufactured. All locos will be equipped with an ESU decoder.

Info: [www.fulgurex.ch](http://www.fulgurex.ch)

### **HEGOB**

Gauge 1: Family Obst showed a double crossover with subsequent double-crossing switches out of their in-house track range – good to have sufficient space left!

The new and illuminated carrier box with viewing window is perfect for all railway modellers, who have no space left. It suits ideally as a “mini-cabinet”.

Also new are the boundary posts as an additional detail of extra equipment.

Info: [www.hegob.de](http://www.hegob.de)

### **Hosenträger**

Gauge 1: A delicate track construction with S6 profiles was demonstrated at the stand of Mr. Dreyer. Once again, the eponymous crossover with real wood beams was to be seen here.

Info: [www.hosentraeger-spur1.de](http://www.hosentraeger-spur1.de)

### **JoWi-Modellbahnhintergrund**

Gauge 1: The range of mid-priced half embossment houses for self-printing was expanded by new patterns like the very beautiful Sprockhövel Station.

Info: [www.modellbahn-hintergrund.de](http://www.modellbahn-hintergrund.de)

### **Kesselbauer**

Gauge 1e: New at the company Kesselbauer is the all-metal-model of the V51 901 in Gauge 1e. The loco is run by 2 engines and is available with or without an ESU decoder.

Info: [www.kesselbauer-funktionsmodellbau.de](http://www.kesselbauer-funktionsmodellbau.de)

### **Kiss**

Gauge 1: The 6-axis heavy-duty wagon SSym Köln (or SSym 46 / SSym 705) was published currently. The wagons come in different variations and several Epochs and are available individually or as a set of three. The floor is equipped with a wooden floor and the stakes are removable. The model of the V80 (submarine) was shown in Sinsheim, it should be delivered before the end of this year.

The BR58 (Prussian G12) and the BR 232 „Ludmilla“ as well as the horse stable wagon GGvwehs 44 were announced. The horse stable wagon will be fitted with leather – like the original - and will come with a cargo of two horses.

Info: [www.kiss-modellbahnen.de](http://www.kiss-modellbahnen.de)

### **KM1**

Gauge 1: The Prussian P10 (BR 39) will shortly be delivered. The model comes in many different DB and DRG variations. The locomotive tender short coupling is brand-new, which will ensure an operation on narrow radii of only 1020mm, coping with the original.

The anniversary loco of the BR 50 also is announced for this year. First samples of the new BR 01.10 and the BR 57 were to be admired in Sinsheim in layout operation.

New cargo wagons are the Omm32 as a flat car and as „Linz“ or Omm 33 „Villach“. All wagons are made from brass and are offered with or without brakeman`s platform or brakeman`s cab.

The range of figures was expanded with five seated passengers and a waiter.

The turning platform, which Mr. Krug added to his product range, was announced only after the exhibition in Sinsheim, but is sensational due to the excellent quality-price-ratio and therefore it surely is worth mentioning. Two different lengths will be available, according to the original. We will introduce this model in detail in our 012-Express at any one time.

Info: [www.km-1.de](http://www.km-1.de)

### **K&R-Modellbahnen**

Gauge 1: Three variations of the “Langenschwalbach” were announced by Mr. Rehbein and scheduled for the 1<sup>st</sup> quarter 2009.

The range of rail cars will be enlarged with the VT 75.9.

Info: [www.spur1-kr.de](http://www.spur1-kr.de)

### **Lematec**

Gauge 1: The SNCF steam locomotive 242 A1, which was already announced in Nürnberg, finally will be delivered this autumn.

The Swiss Ae 5/7 will come out as a green painted variation. The Re 4/4 II will come in five types of the SBB.

Info: [www.lematec.ch](http://www.lematec.ch)

### **Lokführer Lukas**

Gauge 1: The new and up to 12mm thick kit parts for semi-relief system buildings are manufactured from resin. With them service buildings and factories can be designed in an (almost) unlimited size. Facades, window elements, gables, baseboards and roofs can be combined in any order.

The traverser with altogether 10 outlets is being delivered right now. The model has a strong ball bearing drive and is carried out rich in detail. Its length is 715mm and so it will fit to almost every type of locomotive. The model is suitable for outside operation and it can be used on all available track systems.

Info: [www.lokfuehrer-lukas.de](http://www.lokfuehrer-lukas.de)

### **Märklin**

Gauge 1: A hand model of the BR24 was to be peered at on the stand of the market leader. Furthermore, the E03 and the Rheingold were shown.

Info: [www.maerklin.de](http://www.maerklin.de)

### **Modellbaum Manufaktur**

Gauge 0,1: Mr. Grünig was the centre of attraction with his very nicely designed diorama and its different variations of trees and all kinds of interesting model bushes and plants. New at the product range are tree stumps for Gauge 0 and 1, which are available as broken off trees or also as cut down trees and as eradicated trees (individually or as a set of three). Announced

for the next year and already shown in Sinsheim: hops plants in different stages of development – an attention getter, not only for Bavarian layouts.

Info: [www.modellbaum-manufaktur.de](http://www.modellbaum-manufaktur.de)

#### **Modellbahn-Art- Studio**

Gauge 1: Mr. Otahals stand was well frequented. No wonder, in view of all the versatile novelties. In addition to the already presented shunters, the set of figures was enlarged with shunters for Epoch III and IV, with a locomotive inspector and his flashlight and with caretaker “Willi” and his brush.

Concerning road vehicles, the flatbed-trucking VW is offered in new variations, as well as the VW camper van, for example used as a Post monitoring car. The Magirus truck has received an extended pallet and a trailer. As an authentic model the MAN trailer truck comes with selected semi-trailers and is driven by a SIKU-control.

Also new are the container and the loading crane.

Info: [www.masro.de](http://www.masro.de)

#### **M&M Modellbahnen**

Gauge 1: The Company Müller in Sinsheim offers sand store towers in various designs. The delicate brass buildings do possess flexible chains and are available in different colouring.

Info: [www.m-m-modellbahn.de](http://www.m-m-modellbahn.de)

#### **Noblerod**

Gauge 1: On his stand Mr. Römer unremittingly demonstrates the correct patina for buildings in his own way – the numerous audience appreciated this. New is a semi-relief factory building with a shed-roof.

Info: [www.noblerod.de](http://www.noblerod.de)

#### **Officina Uno**

Gauge 1: The very beautiful FS pitched roof wagons as refrigerator wagon typed HG and F were marvelled at in Sinsheim. Next, the Italian manufacturer will come with grain silo wagons and 4-axis tank wagons according to the DB, CFF, FFS and SNCF originals.

Info: [www.officinauno.it](http://www.officinauno.it)

#### **Paulus**

Gauge 1: After the previously shown snow ploughs for the BR218 Dr. Thomas Brodrick now exposed snow ploughs for the V100 true to the original on the stand of Mr. Paulus in Sinsheim. The plastic cast parts are individually painted for the old red and the recent red locomotives. This has the clear advantage that scratches are not visible and paint damages do not occur in everyday use. We will report about the installation of the snowploughs in our next 012-Express.

Info: [www.bernhardpaulus.homepage@t-online.de](mailto:www.bernhardpaulus.homepage@t-online.de)

#### **Proform**

Gauge 1: Once again, the Swiss manufacturer surprised all Gauge 1 enthusiasts with a very special locomotive model: the BR 08 001, which was just ordered by the “Reichsbahn” as an experimental locomotive. The model is equipped with an ESU decoder and with authentic sound.

Info: [www.proform.ch](http://www.proform.ch)

### **Saalbach**

Gauge 1: A whole series of light signals for all assembly purposes are new in the product range of Saalbach. Michael Heldt developed very delicate signals, which are to be installed by the help of a universal mounting base (separately purchasable).

Info: [www.smrail.de](http://www.smrail.de)

### **SSI**

Gauge 1: The model of the quadruple-system locomotive ES 64 F4 (DB 189) comes from Stuttgart. The loco is powered by two “Glockenanker” engines with a worm gear on all axles. A Zimo decoder provides for authentic sound. The lightning was equipped with white and red LED lights and the high-beam headlight received micro bulbs, true to original. Depending on the version, up to four electricity consumers are arranged on top of the roof with different rockers. Required minimum radius: 1500 mm

Info: [www.ssimodellbahntechnik.de](http://www.ssimodellbahntechnik.de)

### **Stangel**

Gauge 1: Kits of different motives of town houses, made from lasered board, are offered by the Polish manufacturer. With the different variations it is possible to design whole Old Town districts, also in semi-relief style.

Info: [www.stangel.pl](http://www.stangel.pl)

### **Studio 95**

Gauge 1e: Studio 95 introduced a whole range of buildings for narrow gauge trains. This includes a one-stand locomotive shed with water tower, an inspection pit and a rail-car scales with cottage. The weighing machine is a replication of a wheel flange scales. At the original the wheel flange was raised for weighing. The length of the platform corresponds to the 8m original.

Info: [www.studio-95.de](http://www.studio-95.de)

### **Wunder**

Gauge 1: In Sinsheim the first brass samples of the E50 with and without crease were introduced. The delivery of the model is planned before the end of this year.

The post coaches 2-a/14 were already to be seen as readily painted models.

Info: [www.wunder-modelle.de](http://www.wunder-modelle.de)

### **WYKO-Echtdampf**

Gauge 1: With the BR 01.10 streamline, Mr. Wyrwich introduced an impressive live-steam model. The gas-fired locomotive has a true to original three-cylinder engine available.

The streamline frame comes from Proform, all other components and the steam technology is originating from WYKO.

All axles are spring-mounted, the weight of the locomotive is about 7,5kg. Without re-feeding the vehicle runs ca. 45 minutes. For the operation, a minimum radius of 2300mm is required.

Info: [www.wyko.de](http://www.wyko.de)

### **ZIMO**

Gauge 1: The Austrian decoder specialist trusts in simulating the original loco sounds in accordance with the working procedures of the vehicles in everyday use. In Sinsheim an E-loco project was introduced to the public. The sound database will be expanded gradually.

Info: [www.zimo.at](http://www.zimo.at)

Pages in Original German Version: 18 - 23

Category:

[Layouts](#)

Bar:

[Railway Station according to an existing example in Gauge 1](#)

Header:

[Ultimate Destination Arneburg](#)

Introduction:

[Realizing a small-sized railway station in Gauge 1 after a model always is a real challenge – Jan Freckmann from the team “Spur 1-Kreativ” dared this task](#)

Author: Wolfgang Oellrich

Pictures: Manfred Weihrauch

After we reported about an all around layout with the focus on “Enjoyment of Driving ad Infinitum” in our previous 012-Express (No. 6, June 2008) we now turned our attention to a real example, which is to be presented in this layout. Strictly speaking, it is about a section of the layout, which shows a reproduction of the local line station at Arneburg in Saxony-Anhalt – surely an acceptable topic for all Wide Gauge enthusiasts with a permanent shortage of space.

Until 1972 the original was situated at the Stendal-Arneburg section. Originally it run as a narrow-gauge railway and was changed to standard gauge in May 1914. At that time steam operation was achieved by a Bn2-T. The fleet of vehicles consisted of one four-axial passenger, luggage and post coach and one third-class carriage. They were joined by three freight wagons of the Prussian State Railway. From 1924 operation was transferred to the “Stendal-Arneburg” local-line.

Subtitle:

**A Grateful Track Plan**

The implementation of Arneburg to the model only required a slight reduction of the station tracks. Besides, the track plan, which is displayed on the following pages, shows the original constellation. Jan Freckmann has opted for a modular configuration to keep the layout transportable. The module heads were generated according to the “Mannheim Standard” to ensure attachment to further layout segments at exhibitions. The total length of the layout is 5,4 metres at a depth from only 60 centimetres. The complete model of “Arneburg Station” is ranging over a total of five modules. “Hübner” tracks (module A – C) and “Dreyer-S49” (module D – E) were used as track material. In the future all tracks are to be changed over to S49 timber sleepers. The switchers also come from “Dreyer”; a double switch DW 49-38-1:7 with 3800mm branch radius and two single switches EW 35-1:6 with 3500mm branch radius. All switches are made in finescale-performance. Currently the switches are motor-driven and equipped with “Hübner” control arms. Similar to the original control boards were used instead of switch lanterns. These come from our own production and are now distributed by “ASOA”. Characteristic for Arneburg are the tracks, which are laid in sand. Gravel bedding

would have been too time-consuming and too expensive. Accordingly, also for realization of the model fine sand was used as bedding material.

To the right the track course suddenly ends at a wall. This is no imagination of the creator at all, for example because of space reasons, but matches exactly the original constellation. Apparently this was a subsequent section terrain, secured against slipping by brickwork. The footpath, lined with trees, and the road runs on the hill behind the wall, leading to the station. Even the advertising pillar and its print were to be found in Arneburg.

Subtitle:

### **Creative Do It Yourself**

Like the advertising pillar all other buildings on the layout were self-constructed according to the original. Because of lack of space both, reception building and freight shed currently are forming the background scenery.

The workshop shed in the right part of the layout is the model of the remnant of the former locomotive shed in Arneburg. Parts of its foundation are still visible on the track next to the workshop. As well as the wall fragments on the siding. Those who look closely will find out, that even they were implemented on the module.

The shed was made from 10mm poplar plywood. Also the different wall facades do testify to the other original function. The plaster walls were emulated by using filler, mixed with sand. The brickwork was made from clinker bricks (distributor: Klinker.de). Due to the low depth of the brickwork they needed to be halved and applied individually. The roof of the shed was made from 1mm plywood, covered with construction paper to imitate the roofing felt. The delicate window frames were computer-designed by using a CAD-programme and transferred to paper afterwards. Each window consists of six layers of paper, glass replica is imitated by using a thin plastic film between the 3<sup>rd</sup> and 4<sup>th</sup> shift.

The workshop itself has an open fire (glowing glue is re-enacted by using light effects) and a chimney for simple forging jobs as well as a working bench with drill stand. The shed with coal storage opposites the workshop was made from the same material.

“Arneburg Station” is livened up by the multiple furnishing details as well as by the self-constructed buildings. Another parts of this are the self-constructed platform lamps with their typical wooden poles and wide screens. The Arneburg water crane also was self-created and is meanwhile distributed by “ASOA”, too. The buffer on the siding is a weathered “Märklin” model. This is to be replaced by one, according to the original, later on. The vegetation around the station area was build by the help of “Heki” and “Silflor” material as well as natural materials. Also the self-created trees do meet the originals in Arneburg.

The signalling in Arneburg is quiet simple. In addition to a lightened switch signal on the buffer only a few, partially also enlightened, protection panels for marking the track ends can be found. Presumably, the traffic in Arneburg also is within admissible range. On the “Intermodellbau” in Dormund there were one 64 with its second-class and third-class “blunderbuss” as well as a VT98 on the way on the layout. In addition, a Kö with its state railway Gr20 “Kassel” and barricade-wagon shunted alongside. That was it!

Jan Freckmann will gradually continue building his “Arneburg Station”. In particular, the construction of the reception building and the freight shed are still missing. Anyone who wants to keep an eye on the progress of the layout should visit the railway modelling exhibitions with Gauge 1 participation. (Almost) always the “Spur1-Creativ Team” is to be

met there. Further information concerning original and model are to be found on the Internet (see box).

**Box:**

Arneburg in the Internet:

[www.altmarkschiene.de/Kleinbahnen/](http://www.altmarkschiene.de/Kleinbahnen/)

[Stendal\\_-\\_Arneburg/index.htm;](http://Stendal_-_Arneburg/index.htm)

[www.spur1.org/wiki/index.php/Kleinbahnen\\_der\\_Altmark;](http://www.spur1.org/wiki/index.php/Kleinbahnen_der_Altmark;)

[www.jfdesign.de/Index.htm](http://www.jfdesign.de/Index.htm)

**Picture Headers:**

Text
“Arneburg Station” in the year 1970, view to the location of the former locomotive shed and the subsequently resulted workshop shed
A DR-64 with short train of “blunderbusses” at the entrance to Arneburg
Detail on the platform: lantern posts and bicycle. Whether the lady is the proud owner of this iron-donkey?
A Kö with barricade wagon stops in front of the railway crossing (or better: platform access) in Arneburg
Conversion of a “Märklin” model: the buffer with its illuminated switch signal
Shortly the 64 will arrive on the platform. Clearly visible: the typical edges on the platform made from tracks and sleepers
The Kö, positioned at Arneburg, is shunting in front of the workshop shed
Details of module A and B: Clearly visible is the workshop building made from locomotive shed remnants and the shelter, which also serves as coal storage
Enlightened like the original: the switch signal Sh2 marks the end of the track
The track layout shows the simple course of the track at “Arneburg Station”
The workshop shed and its various wall facades and its delicate window
Entrance to modernity: left “Hübner” track and S49 profile by “Dreyer”, right oak sleepers with “Hübner” profiles. After modification all tracks will be equipped with timber sleepers and S49 profiles. Clearly visible: the typical sand bedding in Arneburg
View to the workshop shed from the front, to the right the footpath and the road run along a hill, leading to the station
Prepared for auditing control: Sh2 in front of the workshop shed
View to the right end of “Arneburg Station”: wall and fence were replicated due to the original
Get-together of Kö and VT98 in Arneburg; pleasant: the tall model trees

Pages in Original German Version: 24 - 25

Category:

**Original & Model**

Bar:

Series ER 20

Header:

**Economical EuroRunner**

Header:

**Since 2003 the EuroRunner is in use: the Dispolok ER20 of series 253 – our model portrait**

Author: Wolfgang Oellrich

Pictures: Manfred Weihrauch

Since 1998 the Austrian Federal Railways (ÖBB) ordered altogether 100 diesel-electric locos in several batches from the “Siemens Transportation Systems AG”. This was the start-up of the EuroRunner family ER20, which was launched from the year 2002 onwards. The description for this model range was 253 (later 223) at the DB or 2016 at the ÖBB, where the locos were also called “Hercules”.

Meanwhile the loco is on its way in many colour variations and on various lines on the German federal territory as well as on railway networks of neighbouring countries, because privately owned railways used it for modern cargo transport as well as for universal passenger and freight transportation. Not least the new concept of “Rail Solutions” contributes for this purpose: the vehicles are loaned out by the company Mitsui Rail Capital Europe (MRCE), domiciled in the Netherlands.

Subtitled:

**Modern and Economical**

The latest diesel engine technology and an advanced sound insulation are turning the ER 20 to one of most low-noised and emission-reduced diesel locos in Europe. With a 2.000 kW diesel engine and its flange-mounted three-phase asynchronous generator the necessary electricity is produced to run the four engines (one on each axle). The 16 cylinder diesel engines (MTU 16 V 4000 R41, nominal speed 600 - 1.800/min) are possessing Common-Rail injection systems and 4 turbochargers with charge air-cooling. The loco reaches a maximum speed of 140 km/h at a traction power of 1600 up to 1750 kW. As a consequence of the three-phase power transmission an excellent efficiency is reached at all ranges of speed and pulling force.

Modern technology provides for additional saving of energy. Thus, for example, the ER 20 possesses a „Boost“ function. With its help the heating system of the train, which is providing for the electricity inside the passenger wagons, can be switched off during the journey for a short time. As a result the complete electricity, which was created by the generator, is available for the driving engines (traction motors). Furthermore, separate electricity circuits are providing for the load as well as for the starter and so the main battery is unaffected. The necessary starting-electricity is stored in so-called „Power Caps“ (special condenser for energy storage).

But not only economy is an important criterion for modern diesel locos, also eco friendliness is to be found in the Catalogue of Specifications. To avoid smoke formation while idling every second cylinder is switched off, when the ER 20 is stopping at signals or stations. After

15 minutes all cylinders are activated for a short time, which is followed by an activation of the other 8 cylinders, which were not activated before. Due to the fuel injection into the cylinders, both, the combustion and the exhaust temperature are increasing, which reduces smoke formation and emissions while idling.

Subtitle:

### **Versatile Usage**

The initial EuroRunner with the wheel arrangement Bo'Bo' is used for passenger transportation as well as for cargo transport. In addition to the 100 ÖBB locos other ER 20 locos are operating on several private railways in Austria and Germany. These include amongst others the "Nord-Ostseebahn", the "EVB Elbe-Weser" and the "Regentalbahn". Undoubtedly, one of the most popular ones is the "Arriva-Länderbahn-Express", in short: "ALEX", a local train, which is run by the "Vogtlandbahn".

One of the Dispolocos is in operation at the Slovak private railways BRKS. Since mid-July 2007 also an approval for the Czech Republic is available.

As a pure cargo train loco Siemens delivers the ER 20 F without heating, amongst others it is operating at the "EVB Elbe-Weser", the "Osthannoverschen Eisenbahnen AG" (OHE) as well as the "Westfälischen Landeseisenbahn" (WLE).

Five other locomotives were equipped with central buffers and delivered to Hongkong.

Altogether Siemens delivered 131 ER 20 locomotives and 14 ER 20F. Since 2007 the ER 20 received a new chassis, which was also used for the subsequent generation, the ER 20 CF and the ER 30 with Co'Co' wheel arrangement. The new locomotives are mainly characterized by their upper starting efficacy and they are operating on different gauges, including the "Lietuvos Gelezinkeliai" Lithuanian Railways.

**Technical Specifications of the ER 20**

Manufacturer:	Siemens Transportation Systems
Piece number:	131 ER 20, 14 ER 20 F
Years(s) of construction:	Since 2002
Wheel arrangement:	Bo'Bo'
Gauge:	1.435 mm
Total length over buffers:	19.275 mm
Width:	2.870 mm
Driving wheel diameter:	1100/1020 mm
Distance between bogie pivots:	10.362 mm
Smallest drivable radius:	100 m
Weight:	80 t
Maximum speed:	140 km/h
Engine type:	Common Rail System
Engine construction:	MTU 16 V 4000 R41
Engine output:	2.000 kW
Traction power:	1750kW without ZS, 1600kW with ZS
Starting efficacy:	235kN
Nominal speed:	600 - 1.800/min
Power transmission:	Diesel-electrical

**EuroRunner compared to EuroSprinter**

	<b>ER20</b>	<b>ER20 CF</b>	<b>ER30</b>
Wheel arrangement	Bo'Bo'	Co'Co'	Co'Co'
Maximum speed	140 km/h	120 km/h	120 - 160 km/h
Output	2.000 kW	2.000 kW	2.700 kW - 3.500 kW
Starting efficacy	235 kN	450 kN	450 kN
Gauge	1.435 mm	1.435 mm / 1.520 mm	1.435 mm / 1.520 mm
Range of application	Goods loco / all- round loco	Freight loco	All-round loco

**Further information can be found here:**

- [www.dispolok.com](http://www.dispolok.com)
- [www.transportation.siemens.com](http://www.transportation.siemens.com)

Pages in Original German Version: 26 - 29

Category:

**Original & Model**

Bar:

The DEMKO ER20 in Gauge 0

Header:

**The Whispering Giant**

Introduction:

**On its way in different variations, even as a model: the EuroRunner ER20 – we tested the DEMKO Gauge 0 loco for you**

Author: Wolfgang Oellrich

Pictures: Manfred Weihrauch

More than a few visitors were surprised by the appearance of DEMKO at the “Spielwarenmesse” in Nürnberg in spring this year. The quiet new model train manufacturer from Linthe presented a whole series of variations of the “Dispolok” ER20 as finished models in a scale of 1:43,5 and – at that event still as a hand model – in a scale of 1:32.

In addition to the yellow and silver-grey painted Siemens Diesel loco, which was kindly given to us for test purposes, also the “Hercules” in red ÖBB décor, the red and white painted OHE loco and the “Regentalbahn” vehicles in a strikingly blue painting are available. On request Mr. Helmig offers further variations at extra charge.

The model comes in a solid cardboard box, bedded in rubber foam. A detailed operation instruction is included in delivery. An assembly drawing is also included, which describes the demounting of the loco chassis and a description of the pin assignment on the control board.

Subtitle:

**Detailing**

Once the loco is unpacked, the first impression is overwhelming. This does not only concern the considerable length of 443mm, but also the massive weight of 3113g. No wonder, because the chassis is completely made from brass and mounted on a frame from zinc diecasting.

All brake and security devices on the undercarriage are completely emulated. All aggregates are carried out properly, and they also did not forget the snowploughs on the front and the rear end. The buffer beams are equipped with original screw-type couplings and brake hoses. In our sense the suspension of the typical angular buffers are adjusted a bit too hard. The perforated shunter`s stairs are appealing to us and also do the stairs leading to the cab. All handrails and doorknobs are attached separately. Solved very well: the fold out rear-view mirrors – they are not intended for tunnel transit at a too small structure gauge; this mechanism prevents from braking off while unpacking the locomotive.

Also very nice are the – correctly – four or two lateral fan grids and the edges on the lateral loco casing, which are set in contrast against each other.

The large panoramic windows on the fronts of the loco are opening up the view to the replicated drivers cab. But searching for any operating personnel will be in vain.

The typical light crookbacked transition of the ER 20 between front and rear of the forehead to the roof area is carried out well. The roof possesses exemplary signal devices, a fan aggregate and chimneys. Underneath the rear fan grill the large (non mobile) fan can be seen.

The painting work is convincing, all RAL colours are correct. The colour separation edges are separated properly, the trim lines are applied accurately. Not so beautiful: the yellow paint residues on one of the outside mirrors of our test locomotive: which means some deduction to the “artistic score”. The mat black painting of the front side appeals a lot to us. The printing leaves nothing to be desired, all details are matching the original ER20-013 and are readable. The Siemens nameplate was added separately.

Subtitle:

### **Technique**

For testing the driving characteristics of this quite large locomotive we had to rebuild the usual test track. According to the manufacturers opinion the loco should met the challenge of radius R1 by Lenz (914,4mm), but during the test, when driving through the narrow radii, occasionally derailing happened. Our “Plan B” with a radius of 1200mm worked out fine and the loco passed through without any problems. But if the enclosed upgrading shock absorbers are installed, a minimum radius of 1600mm is required.

The DEMKO loco is not serially equipped with a decoder. Which is too bad, according to our opinion, because a model like this certainly should innately possess an appropriate control as well as an adequate sound. However, a 21-pin interface, according to NEM, for backfitting a decoder does exist. ESU provides the appropriate part including a sound module for the ER20. ZIMO also offers a decoder, but the sound is not available yet. Lenz is distributing an adapter for the 21-pin interface and so the loco can be provided with an 8-pin decoder.

For this reason the tests were made analogically. Without loading, the locomotive sets itself in motion at 3,5 Volt with a slight growling sound. This rather unpleasant noise will be minimized during a prolonged length of the journey. The movement rate in the lower speed range is rather clumsy, but admittedly this loco was not built for everyday shunting operations.

Once the locomotive has started, it is living up to its name; also when it reaches the originals maximum speed of 140 km/h at around 10,5 Volt only a slight whispering can be heard. The especially developed drive by DEMKO surely contributes significantly. After releasing the easily accessible eight cross-drive screws beneath the rail guard and the middle aggregate, the chassis can be removed from the undercarriage and opens up the view to the locos technical heart. Each axle is provided with one of the in-house gearings (with an oil pan!). On every bogie a Faulhaber engine ensures powerful driving via gear belts. The control electronics are placed in the centre of the previously removed aggregate.

Like at the original loco, this burly drive is making a real draught-horse out of the ER20. The drawing of 60 axles in the plane is no big deal for the model locomotive. Similarly, a trailing load of 6kg at a gradient of 3 per mill was managed without any sliding (and without traction tyres). Also starting at a grade with an arc and with tension load the loco is managing brilliantly.

So the driving quality leaves almost nothing to be desired, apart from the point that the loco, despite of its high weight, is tending to stagger as soon as the maximum speed limit is broken.

The front lighting is visible in the analogical operation at about 3 Volt. The bright-white LED`s are delivering an antiseptic light, which takes getting used to, but this is in accordance with the original loco in Epoch V by all means. At first glance the rear lighting leaves a lot to be desired. Even at high speed the red lights were hardly evident at daylight operation. But also in this case a solution is available: via a potentiometer on the circuit board the luminosity can be adapted individually.

Subtitle:

### **Conclusion**

To all fans of the modern railway the DEMKO ER 20 certainly is an enrichment of the domestic fleet. Anyone who has fallen in love with this loco, soon will get more than one of the variations for himself –ones individual conveniences are not regarded here. With this model Mr. Helmig hit a lot of Epoch V fans (or Epoch VI, to this see our report in the category “Info-Express”) straight to the heart.

And even die-hard Epoch III fans have to admit: there is something special about this loco! This model is convincing, beginning with the striking painting up to the enormous pulling force. Compared to the original, all proportions are harmonious. The driving characteristics altogether were found to be very good. A serialized digital operation would be desirable, which in fact should go without saying at this prize level – although many Gauge 0 modellers are still using analogical operation.

At the announced Gauge 1 models the digitization and an included sound chip are optionally available for extra charge. Another suggestion: a powered fan wheel really is something!

Whether Mr. Helmig can be persuaded to build an IIm or Gauge 2 model surely is depending on the market. If this case will occur, the advertising slogan, labelled on the Dispolok, will be foreboding: Beating all records with the Whispering Loco!” But beware: also the company in Sonneberg is well known for their model railway innovations!

Picture Headers:

Text
The control unit of the ER20, located in a recess of the aggregate in the centre of the undercarriage
The Whispering Giant in all its glory, very convincing; the painting of the model
Engine with belt drive on the bogie
After demounting the chassis, both engines and gears are visible
The different side views of the ER20, according to the original
Detail: Wheel set with brake system, on the undercarriage above the meticulous labelling
Access to the drivers stand No. 1; beneath: the snow plough
View to the grey roof of the Dispolok with its fan grill and the fan wheel beneath
The ER20 is censored by our summery Co-tester team

## Overview of the Characteristics:

	<b>DEMKO ER 20</b>
<b>Offered versions</b>	2016 ÖBB (with S-Logo, ÖBB-Logo or standard company number); Siemens Dispolok (with or without standard company number); OHE-Loco; Regentalbahn Cargo or Alex-Loco
<b>Loco No. / Epoch / Carrying out</b>	9480 0253 013-7 / Epoch V (VI according to revised regulation) / Dispolok Siemens "Flüsterer" (Whisperer)
<b>Engine / Transmission / Driving axle</b>	Drive on all 4 axles, 4 gears, 1 Faulhaber-engine on each bogie
<b>Electricity discharging / Traction Tyres</b>	On all axles, no traction tyres
<b>Decoder</b>	Not built in, NEM-interface
<b>Weight</b>	3113 gram
<b>Manufacturers suggested retail prize</b>	2290 € (Prize at advanced booking 1990 €)

## Engine Power

<b>Conditions</b>	<b>Pulling Force</b>
Lowlands, plane or radius 1200 mm	50 axles without sliding
Gradient with 30 per mill and radius 1200 mm	50 axles without sliding
Approach in a gradient with 30 per mill in an arc with radius 1200 mm	50 axles without sliding

### General Test Conditions of Model Locos in Gauge 0:

- With Intellibox in DCC-mode or LZV by Lenz and hand controller (LH90), where decoder available, otherwise analogical
- With and without sound
- With and without load
- Lowlands in a 914,4 mm radius (R1 by Lenz)\*
- Gradient up to 30 per mill and radius 914,4 mm (R1 by Lenz)\*

\*The R1 by Lenz could not be used for this loco, so a flexible track arc was made at a radius of 1200 mm

## Dimensions of the Model Compared to the Dimensions of the Original

<i>Dimensions in mm</i>	Original	1:43,5	Model
<b>Length over buffers</b>	19.275	443	443
<b>Maximum width</b>	2.870	66	67
<b>Rotary distance between cones</b>	10.362	238,2	237,8
<b>Wheel diameter</b>	1.100	25,3	25,5
		NEM	
<b>Wheel set internal dimension</b>	-	28,4	28,6
<b>Flange height</b>	-	1,6 max.	1,5
<b>Wheel gauge</b>	-	4,7 min.	4,8

### Overall evaluation

<b>Characteristics</b>	<b>DEMKO ER20</b>
<b>Drive and mechanical handling</b> (Robustness, reliability, tested safety CE etc., point deduction for traction tyres)	<b>9</b>
<b>Decoder and electronic driving behaviour</b> (compatible to DCC/Motorola, user-friendly, driving behaviour adjustable true to the original, etc.)	<b>Not rated</b>
<b>Sound</b> (trueness to the original, change options, additional sounds etc.)	<b>Not rated</b>
<b>Detailing</b> (incl. painting, lettering, signs etc.)	<b>10</b>
<b>Correlation to the original</b> (proportions, Epoch trueness, RAL-Colours, original components, etc.)	<b>10</b>
<b>Standard equipment*)</b>	<b>0</b>
<b>Price / performance ratio</b> (aligned on the prize of advanced order)	<b>9</b>
<b>Possible points 45</b>	<b>38</b>

#### Individual points scale:

From 10 (unsurpassed) to 0 (totally useless or no additional equipment available)

#### \*) Extras:

Built-in driver 1, interior lighting 1, fan driven by random generator 1, roof or door to open 1, red light switchable in addition 1

Pages in Original German Version: 30 – 33

Category:

**Modelling**

Bar:

**Locomotive Shed in Gauge 0**

Header:

**Arranged!**

Introduction:

**Home for the T3 – a small locomotive shed made of architecture board and wooden strips – starting to upgrade**

Author, Pictures:

Norbert Bender

Like many other model builders who eventually changed the scale, in my case also some time passed by from the first touch (my preference for scale 1:43,5) to the actual real start. Until then you are wondering about what to do with the “Old One”. Thoughts occur about how and where to place the “New One”, not to mention the modeller’s budget.

Once you got hold of the virus you certainly cannot let go any more. But also under restriction on “The Little” there are ways to make a great deal. During Christmas time I stocked up on to a few wagons (Lenz), one T3 (Schellenkamp) and a 012-Express subscription and now my first project comes into existence - an appropriate home for the (small but mine) T3.

Subtitle:

**The idea in my head**

On one hand the appearance of the locomotive shed emanates from my imagination and impressions of analogue buildings, which were collected as photos and true to size drawings. On the other hand I am not captious concerning scale at all. The overall impression is more important to me. So consulting a PREISER craftsman and measuring the optimum size for the T3 will surely help. This should really work.

For the first time I took architecture board as constructing material for building a model. This material has the clear advantage of easy handling. The board can be cut by just using a Stanley knife, gluing was made by using a common adhesive, such as “Uhu” or “Pattex”.

A pane of glass, used as an underlay and angle moulds from hardwood for bonding served for a planar and rectangular skeletal structure.

With the help of a small mitre box and a very fine saw both, framework and roof were made from small balsa strips (hardware store). A small Japan saw renders a good service.

Subtitle:

**Necessarily rectangular**

Wooden spacers were used to ensure an even positioning of the vertical and horizontal framework. This works better than marking, gluing and unregulated displacing while pressing on! Initially the diagonally beams were planned longer, then marked and cut a little too short and afterwards true up patiently.

Intentionally I left one of the longitudinal sides of the locomotive shed completely open to deliver insight into the interior zone, which is to be shaped later on (garage, pit, etc.). I still deliberate about a wall for temporarily insert.

After a longer search for a fume outlet I finally discovered a solution at the gas installation trade. Small copper pipes plus finished arches (fittings) proved to be serviceable. Though the chimney stalk worries a little. Surely an answer to this problem will be found in the end.

Subtitle:

### **Fettling of the wall**

After the bare brickwork is finished and the timber framing had received its patina of diluted black-brown colour, now it's the plasterers turn. The framings now are filled with construction plaster and hobby modelling plaster from the DIY. The plaster should not be too fluid in order that nothing is running down the walls. On the other hand application should not be made too solid either, for otherwise cracks and ugly joints will occur at the edges of the wooden construction while drying. Depending on the used material, everyone has to find out the best consistency for himself.

After drying the imitation of brickwork is starting, which means a lot of work. For this I coaxed my dentist into giving me a suitable tool: a simple steel bracket with a curved point made from aluminium. Therewith carving the joints can be made easily. You better do not think about what this tool is normally used for... For doing dusty work like this, of course, appropriate arrangements have to be made before. One possibility would be a washing facility. Wasn't there something similar in the 012-Express No 2...

Now the dentist's tool has finished its work and this boring procedure finally is done. The scaffold builders were already there and now painting of the facing can be started. The first coating should be an exterior wall primer (DIY) to seal the absorptive plaster. Otherwise colour consumption would be illimitable. I chose "clinker-red" by "Anita Dekor" for painting the walls.

Mixed with water at a ratio of circa 1:5 and without stirring there will be a different quantity of colour pigments on the brush with every single dip. So various shades of colour do appear all by itself. By the way, the impression of a slightly dilapidated old pile does occur all by itself, because the walls are already crumbling here and there while carving them.

As things stand today and respectively at this construction level I can only say that it is real fun and I really did not regret switching the Gauge. Far from it! The scale has become larger and the space remained the same, which means that the displayed section became smaller and the issue is narrowed a little, but the level of detail now is considerably upgraded. And ... almost everything is to be done without using your glasses!

**Picture Headers:**

Text
Lateral view of the locomotive shed from architecture board and balsa – the Bw employee is used as measuring unit
The high extension gives a noble appearance to the whole building
The locomotive shed with its longitudinal side still open: this will deliver the insight into the interior zone later on
The T3 has duly arrived at its new home, while its master is examining the temporarily inserted window
Still parts of the construction timber is not removed yet and the topping-out ceremony is pending: the master builder is already celebrating
The plasterers crew are marching up with tools and modelling plaster
The timber framing with its patina, the extension with its water tower is already been put in plaster
The locomotive shed is plastered, too. The interior plaster is still lacking (will be applied later, together with the design of the interior decoration)
The pictured dentist tool does best for carving the walls
After all that dust ...hopefully the washing facility is finished soon!
The scaffold on the locomotive shed has been put up, painting work is in full swing ... but still no plumber was to be found to install the wash-basin
By carving the walls an uneven brickwork structure is created with “designated” weathering traces

Pages in Original German Version: 34 – 41

## **Gauge 0-1-2**

Category:

**Modelling**

Bar:

**Building a coal feeding crane for the branch line step-by-step – in Gauge 0, 1 and 2**

Header:

**An appreciated aid for coal feeding**

Introduction:

**In Epoch II and III they had been installed on many branch line stations – the common coal feeding cranes. The following handicrafts article will show how such a crane is emerging as a model.**

Authors: Patrick Dalemans, Wolfgang Oellrich

Pictures: Patrick Dalemans

Due to the increasing traffic, also on branch lines, established coal feeding made with the help of shovels and baskets was replaced by cranes to discharge the railway staff. So supplying the steam locos went considerably faster, which in turn was a benefit for accurate timetables.

The design of the cranes ranged from simple wooden stand structures, operated with hand cranks up to motorized cabin cranes. One type, which was to be found at many stations, was a hexagonal cabin crane, bedded on a brick foundation and a concrete base, a wooden construction with cab. This one was the godfather of our construction project, which will be gradually described in the following pages.

Information concerning the used materials is indicated within each step. All brass profiles can, for example, be purchased at the company “Hassler-Profile”. As tools and equipment the usual workshop equipment can be used.

### **Picture 1:**

The complete coal crane including coal- storing room. In this article we will not elaborate on the coal storing room for it already was described in issue No. 6 of the 012-Express (02/2008).

Subtitle:

**The crane base**

First, a base plate has to be formed from 4-6mm plywood. If, as in our case, the crane is to be designed including coal storing room, a plate size of 350x150mm should be taken for Gauge 1. If the crane should be used alone, such as supplementing into an already existing layout, the base plate has to be formed accordingly smaller. For Gauge 0 and 2 the size naturally has to be adapted.

**Picture 2:**

The foundation for the crane is to be formed from 5mm plywood. The base consists of 4 equally sized sidewalls, which are glued together and also are glued onto the base plate. As can be seen from this picture and the following ones the cover on 2 opposite sides is slightly overlapping. On one side an additional overlap exists, where later on the stairs will end.

Dimensions for the base construction (mm)			
Gauge	0	1	2
Material thickness	3,5	5	7
4 x side walls Height x Width	62,5 x 59	85 x 80	120 x 113
1 x cover	81 x 62,5 + overlap one-sided (width x depth) 22 x 30	110 x 85 + overlap one-sided (width x depth) 30 x 40	156 x 120 + overlap one-sided (width x depth) 43 x 57

**Picture 3:**

The cover is receiving an 8mm hole right in the middle. Now from the bottom up a correspondingly large screw with washer and counter nut is to be inserted as shown below. For Gauge 0 a 6mm hole and screw is sufficient. This appliance is used for supporting the crane cab later and it urgently needs to be put to the cover in an absolutely upright position.

**Picture 4:**

For imitating the exposed walls the sidewalls are to be irregularly printed with cardboard showing bricks. They can be purchased in different dimensions, for example, at the company Faller or Vollmer. In order not to pile on with the brickwork the cardboard has to be thinned out from the rear side. Therefore individual layers have to be peeled off carefully.

**Picture 5:**

The layers on the sidewalls, which are still exposed, now are receiving a thin (!) coating of plaster and grey concrete colour, such as Heki-Concrete. Weathering marks, such as frost cracks or water and scale traces are to be made from white acrylic paint and will give a realistic look to the model even more. In this case everyone should choose his level of weathering for himself.

**Picture 6:**

The cover now is receiving a lateral boundary made from small pinewood strips. The strips should protrude around 2mm over the base plate and should be glued in this position. Afterwards the holes for supporting the guardrail posts are to be drilled into the plate. In former times, often pieces of old rail profile were used. In this example we took brass posts from ship modelling. They already do possess holes for the later support and soldering of the brass wire, used for the guardrails. The cover finally is to be filled with thin plaster. An evenly distribution of the covering has to be respected.

**Picture 7:**

With the help of a scribing iron criss-cross diagonal kerfs are to be scored into the still slightly damp plaster. This gives the typical brick structure to the surface. The flutes then are to be brushed and the dust has to be removed.

**Picture 8:**

In former times, often different colours of bricks and clay floor plates were used. This resulted in a kind of checkerboard pattern. Starting with a light grey colour, now every second plate has to be painted. The remaining plates are receiving a dark grey colour. Sufficiently diluted acrylic paint should be used here. Afterwards, the splices are to be painted by using a mixture of mat black gloss paint and cleaning solvent. This will increase the plasticity of the surface.

**Picture 9:**

At the bottom of the cover plate a steel girder imitation is to be fixed. According to the overhang plastic profiles are to be cut to length, which will be glued to the cover plate from the bottom by using superglue.

**Picture 10:**

The balustrade is receiving a guardrail made from 2mm brass wire. The wire is to be soldered with the posts (or fixed with superglue).

**Picture 11:**

On the cover next to the stand, on the side opposites the overhang, a landing made from plywood is to be fixed. This will be used to support the wooden stairway construction, later.

Subtitle:

**Design of the crane cab****Picture 12:**

For constructing of the floor and roof plates hexagons are to be sawed out from plywood. The edge lengths for the different gauges are to be found in the box beneath. The floor plate is to be receiving a hole of 8mm (Gauge 0 6mm) just in the middle. Through this hole, the crane cab later on has to be connected to the base by using an 8mm nut (Gauge 0 6mm) and washers, to ensure a rotating bearing.

Dimensions for the construction of the crane cab (mm), floor and roof plate			
Gauge	0	1	2
Material thickness	3,5	5	7
Edge length floor plate to hexagon	25	35	50
Edge length roof plate to hexagon	30	42,5	60

**Picture 13:**

The sidewalls of the crane cab consist of veneer from Obeche wood, in which at a distance of about 4mm deep groves have been milled. This type of veneer is used for ship models, for example, distributed by the company “Aero-Naut” ([www.aero-naut.de](http://www.aero-naut.de)). The walls are to be grooved to the outside and the desired replica of the original structure arises, which was made from planks with tongue and groove joints (such as the panels for ceiling linings, used nowadays).

**Picture 14:**

Five of the sidewalls are to be receiving a symmetric windowpane on half width. The window frames and crossbeams are to be built from thin strips of balsa wood, as well as the

inner wall reinforcements, to ensure an increasing stability. Pine strips are to be glued to the sixth sidewall to imitate a door (all dimensions see box).

Dimensions for the construction of the crane cab (mm), sidewalls			
Gauge	0	1	2
Material Thickness	1,5	2	2,5
6 sidewalls, longitudinal side each reamed to 45°	28 x 52	39 x 70	57 x 100
Window opening, width x length (intervals of bottom edge sidewall to bottom edge window)	15 x 15 (26)	20 x 20 (35)	28 x 28 (50)
Door, width x height (intervals of bottom edge sidewall to bottom edge window)	15 x 37 (3,5)	20 x 50 (5)	28 x 37 (7)
Pine wood strips for door construction	0,7 x 2,5	1 x 3	1,4 x 4
Frame strips and reinforcement from balsa wood	0,7 x 1,5	1 x 2	1,3 x 2,5

**Picture 15:**

Finally the walls are to be interconnected by gluing them. Please mind an accurate adjustment. The walls should be fixed by using adhesive tape or rubber band while drying.

**Picture 16:**

The roof is made from cardboard and is to be assembled of 6 individual triangles. Possibly the edges inside need to be stabilized additionally and the outside edges need to be plugged up.

**Attention:** Do not attach the roof before the crane arm as well as the crane cab is being fixed to the base!

**Picture 17:**

If you are working accurately, the longitudinal sides of the triangles can be reamed to 45°. If you do so, the lower edges of both, triangles and sidewalls, need to be accordingly broadened.

Dimensions for the construction of the crane cab (mm), roof			
Gauge	0	1	2
Material thickness	1,5	2	2,5
Roof: 6 equilateral triangles	Lower edge: 25 Height: 30	Lower edge: 35 Height: 42,5	Lower edge: 50 Height: 60
Lower edge of triangle at chamfer of 45°	28	39	57

**Picture 18:**

Similar to the base cover also the roof floor plate is to be received a border of pine strips. In order to loosen the construction it is possible to use strips of different dimensions and glue them on top of each other. This creates a “staged” border.

Subtitle:

**Crane arm and crane fitting****Picture 19:**

The crane arm and the associated crane attachment to the cab are made from brass profiles.

**Picture 20:**

The fitting is to be soldered by using L-profiles, as shown in the illustration below. In order to avoid slipping, the easiest way is to fix the components by using a solder gauge.

Dimensions of the crane arm fitting (mm)			
Gauge	0	1	2
Material thickness	Each ca. 1/10 of the raw material		
Brass angle profile	3 x 3	4 x 4	5 x 5
2 lengthwise fittings for the cab	30	40	56
1 crossbeam for the cab	18	25	35
2 short fittings for supporting the crane arms	9	12	17

**Picture 21:**

For this example a ceramic perforated plate was used, where the components can easily be affixed by using brads or small nails.

**Picture 22:**

The longitudinal profiles at the cab each are to be received a hole, laterally in the upper 5<sup>th</sup> section, for supporting the counter fittings of the crane arm; the profile side, which is leaning towards the cab is to be received three evenly arranged boreholes for fastening the cab by using small hexagonal screws. The short fittings for supporting the crane arm are to be drilled through at the front third section.

**Picture 23:**

The crane arm consists of two symmetrical running brass L- profiles. Both side arms are to be arranged at an angle of ca. 10° to each other. By the use of flat brass rods the two arms are to be linked together. The underside of the crane arms are to be carved in up to a half, as shown in the illustration. After that, they are to be received a borehole on both sides for connecting them to the short fittings of the cab. To ensure a rotating fixation a small brass bolt is to be passed through the boreholes and the crane arm and soldered to the fitting on the interior side.

Dimensions of the crane arm (mm)			
Gauge	0	1	2
Brass I-profile, length x height x width (material thickness)	114 x 3,5 x 2 (0,2)	155 x 5 x 3 (0,3)	220 x 8 x 4 (0,4)

Brass flat course	1,5 x 0,5	2,5 x 1	3,5 x 1,5
Upper length (interval to crane arm end)	7 (18)	10 (25)	14 (35)
Middle length (interval to crane arm end)	11 (55)	15 (75)	21 (106)
Bottom length (interval to crane arm end)	15 (85)	20 (115)	28 (163)
Brass wire	1,5	2	2,5

**Picture 24:**

The inclination of the crane arm is to be made by the help of two brass wires, passed through the holes on the longitudinal fittings of the cab or on the medium crossbeam of the cab and soldered afterwards. At the upper end of the crane arm a small rotating brass wheel is to be installed to support the crane boom.

Subtitle:

**Painting and finishing****Picture 25:**

The walls of the crane cab are to be inked by using water-based wood stain (dark ash-tree). Window frames and door are to be received a light grey and mat varnishing. On the inside of the window frames thin acrylic glass is to be attached by using superglue. Both, door and frame now are to be slightly weathered by using a solution of black varnish, which is diluted with cleaning solvent. By taking cleaning solvent it is guaranteed, that the acrylic glass is not being affected and also an ugly mat layer can be avoided.

**Picture 26:**

The crane boom, the fitting and the guardrail are to be varnished by using mat rust colour. Also the tiles on the roof can be provided with traces of rust, as well as the base wall and the crane fitting. Further weathering is being applied by the use of strongly diluted mat black colour. The side limit on cover plate and stair base are to be varnished by using dark grey colour.

**Picture 27:**

The cab is to be placed onto the base and pivot-mounted with the help of two 8mm nuts (Gauge 0 6mm). The upper nut additionally is to be fixed with superglue to avoid later dismantling while rotary motion of the cab. Now, finally the roof is to be attached.

**Picture 28:**

Usually the roofing of small coaling cranes was made from bituminised boards. In order to implement this to the model triangles are cut out of fine black sandpaper, according to the roof size and are to be glued onto the roof construction. Any joints can be compensated by using thin and already etched pine strips. Make sure not to use too much paste, otherwise remaining glue would cause ugly marks to the sandpaper.

**Picture 29:**

The crane hook is to be constructed from a brass hook with thread, like it is used for airplane modelling. 3 or 4 washers and a small brass nut are to be applied to the thread. All components are to be soldered by using soldering flux and brazing solder. The thread is to be ground away and a small brass ring is soldered to support the crane boom. Subsequently, all components are to be painted by using mat rust colour. A black plastic string is to be used as

a crane boom. Alternatively small chains from military modelling will serve this purpose, too. The crane hook is directed by a hole in the sidewall of the crane cab, which is positioned in the middle of the crane arm fitting.

**Picture 30:**

In addition, the crane cab is to be receiving a rain water down pipe made from aluminium coloured or light grey plastic tube. The stairs can be self-made by using basal wood remainders or purchased as a finished model from ship modelling (Aero-Naut). Using white acrylic paint and an almost dry brush will ensure further and discreet traces of weathering. If desired, the base can be landscaped by using Heki material.

In most cases, however, the crane quickly will find its new home besides the coal storing room at the BW. And certainly one or the other already is thinking about an adequate motorisation ...

**Box:**

Further information is available at the PAJ's modelling group: [www.paj-modelbouw.be](http://www.paj-modelbouw.be) or [patrick.dalemans@pandora.be](mailto:patrick.dalemans@pandora.be). The finished model is available in small series at the Lokladen, Bingen: [www.der-lokladen.de](http://www.der-lokladen.de)

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Category:

**Modelling**

Bar:

Building Bridges Systematically - Part 4

Header:

**Mounted well – easy to walk on!**

Introduction:

**How bridge bearings are to be installed properly and the footpaths for the linesman are to be designed, this is what Part 4 is about.**

Author and Pictures: Wolfgang Bayer

As so often at bridges too, the devil is inside the details. This is evident when it comes to the construction of the bearings, the footpath surfacing and the transition between bridge and counter bearing.

After construction of several bridges for all gauges - specifically the steel superstructures – have been described in the previous parts, subsequently the accurate bearing for a proper functioning of the bridges, which is indispensable in practice, will be described now. The construction of the counter bearings is often underestimated, as well as the different methods of constructing the bordering paths.

Beyond these details of structural design, in this part we will also provide the opportunity of using this bridge system for Gauge II.

Subtitle:

**Bridge bearing at the original**

Unfortunately, also among well made bridge models bearing replicas are present, which could not have exist at original bridges. At the here presented bridge system we therefore put our focus on the replication of bearings, which are in accordance to the functionality of the original and also on available profiles.

**Drawing 1** shows the operating principle of the used bearing types. As shown in **system sktech a)** the bearings not only have to transmit the power from the superstructure to the counter bearings, but also have to compensate temperature caused expansion and deformation of the superstructure, which is caused by the working load, for example. Either steel or rubber storage bearings can be used for this bridge system model. A combination of both kinds of bearings on one end of the bridge should be avoided, though. Steel bearings are the classical solution and rubber storage ones will be more modern. Along routes of the “Deutsche Reichsbahn (East)” comparable steel bearings were used since shortly after the political turn-around.

Subtitle:

**Steel Bearings**

Older steel bridges were equipped with bearings, which were built by using castings and parts of ground steel. Not till the welding technology it became possible to built the bearings from steel plate parts by using just a few cast parts – such as the rolls. Since cast bearings for the

model are very complicated to build (and expensive), welded bearing originals were chosen for our model bridge.

**Drawing 1 b)** shows the small steel bearings. These are intended for bridges with a length of up to 10 segments. The fixed bearing ensures a loose jointed support for the superstructure, so deformations, caused by working load for example, can be carried without any force. **Picture 1** shows a fixed bearing on a framework bridge, which was built around 1930. The joint, which compensates the deflection of the superstructure, is clearly visible. Although many parts of this bearing, which are belonging to the riveted bridge, are made from cast parts, the principle is matching welded steel bearings.

At a roll on the small, mobile bearing both, length compensation as well as rotation is given, which is analogically necessary for a joint to compensate the deflection of the superstructure. At the large steel bearings, which should be used for bridges with 10 or more segments, the fixed bearing is built analogically to the small steel bearing. As **Drawing 1 c)** shows, the operation here is considerably more complicated. For the transfer of large loads from the superstructure to the counter bearing 2 rolls are necessary. This requires a joint in the centre of the two rolls to compensate the deflection of the superstructure, like it will be emulated on the model. **Picture 2** shows an appropriate bearing at the original.

At the described steel bearings on the original, expansion in the lateral direction was structurally not considered. The accepted bearing clearance here is sufficient. In track direction the bearings on the left side of the bridge are conform to the bearings on the right side. Accordingly, on each superstructure 2 fixed and two mobile lengthwise bearings are necessary.

Subtitle:

### **Layers of rubber bearings (Elastomer support)**

At new bridges nowadays the considerably more ordinary rubber layer or elastomer bearings are used.

The core of the bearing is the cushion, which consists of hard rubber (elastomer) with sheet steel insertions. It enables longitudinal and transversal deformation rotation, similar to a joint. In general: the bigger the cushion the stronger the forces, which are carried to the bearing and can be transferred to the superstructure. In principle, at railway bridges the cushions are laying between 2 steel plates, which are the footplate and the head plate. Adhering structures in different design are welded to the steel plates, which provide for well-fixed bearings in every possible direction. Since the fixations often are delicate and masked and therefore on the model only the welded bars are visible, on our bridge system a special case of rubber layer bearings (which is now actually the norm) was emulated.

According to current rules for bridges up to a length of 30m no fixed bearings are required, if the track on the bridge is fully welded and the bearings are allowing a tolerance of +/- 4 mm for the superstructure in the longitudinal and transversal direction.

So the braking force, which otherwise had to be carried by one or two fixed bearings, are remaining inside the track. Since the transversal expansion of the rubber layer bearings is also to be considered, on one side of the bridge transversally fixed bearings and on the other side all side mobile bearings are necessary. The transversally fixed bearings are carrying forces from the side and blast pressure. If the train is driving in an arc, centrifugal forces will occur additionally.

An example for a rubber layer bearing on the original is shown in **Picture 3**.

Subtitle:

### **Bridge bearings on the model**

**Drawings 2 - 4** are illustrating the bearings for the bridge system in Gauge 1. **Table 1** shows the corresponding list of materials. The bearing drawings and the list of materials for Gauge 0 are not displayed here due to the complexity. Like all drawings and lists of material for the bridge system, a free download from the website of Mr. Fiedler (see box: source) is possible any time and can be printed in full-scale or they can be ordered from him including building components.

Subtitle:

### **General assembly instructions**

The bearings were selected in a way to ensure as few parts as possible. Identical parts do possess the same positioning description. The drawings are showing calculated dimensions without tolerance, the necessary tolerance can be given by using needle files.

The finished bearings can be soldered or glued to the superstructure. The bridge in Gauge 1, which was already shown in 012-Express No. 6 (June 2008), received soldered bearings. In order to avoid loosening of soldered connections on the prepared bearings, they can alternatively be fixed to the bottom boom by using Turbo2000 (Company Boldt, Wermelskirchen, [www.boldt-co.de](http://www.boldt-co.de)). The rolls were attached similarly. The bearings are glued to the benching of the counter bearings. It is necessary to place the bearings exactly right in the middle underneath the last buckling bracing of the main girder.

The joints of the bearings can be moulded in a way, that the bridge can be lifted at these points. So the locating bar is remaining on the superstructure. The rolls can also be slightly tilted, to emulate the bearing positioning of “summer” or “winter” drive.

**Picture 4** shows the small steel bearings on the Gauge 1 bridge, **Picture 5** the large ones on the Gauge 0 bridge and **Picture 6** shows the small mobile roll bearing on the almost finished Gauge 1 bridge of a railway modelling friend of mine.

Subtitle:

### **Special assembly instructions**

- **The small fixed steel bearing (Drawing 2)**

The bearing body (Pos. S.2.1) is to be soldered onto the base plate of the bearing (Pos. S.1.1.) The bearing body is made from an angle profile 10x1 according to the height dimension in the drawing. It is recommended, that the upper corner of the angular profile, where the locating bar (Pos. S3) has to be attached, should not be filed off before the bearing body is soldered. The part, which has to be filed off, is just 1mm high. The locating bar (Pos. S3) has to be soldered to this corner of the bearing body. The locating bar should be slightly rounded down on top. The head plate of the bearing consists of (Pos. S7.1 and S), they are to be soldered together. The recess of approximately 2mm has eventually to be widened at (Pos. 7.1.) to ensure a slight movement and a tolerance of the bearing before adjusting the locating bar (Pos. S3).

- **The small mobile steel bearing (Drawing 2)**

For the guiding of the rolls, the boreholes into the base plate of the bearing (Pos. S1.2) have to be made in accordance with Drawing 2. The roll (Pos. 4.1) is made from round material at a 7mm diameter. The guiding of the rolls (Pos S4.2.) has to be soldered to both front surfaces. The head plate of this bearing consists of (Pos. S7.2 and S8). In (Pos. S7.2) again holes for the roll guiding are to be drilled. Before (Pos. D7.2 and S8) can be soldered together it is to make sure, that the guiding is moving easily through the appropriate holes. If necessary, these boreholes have to be widened or reamed out by using a small file.

- **The large fixed steel bearing (Drawing 3)**

Analogical to the small fixed bearing the bearing body (Pos. S2.2) has to be soldered to the base plate (Pos. S1.3). The locating bar (Pos. D3) and the head plate (Pos. S7.1 and S8) are corresponding to the small fixed bearing. The already given instructions are to be observed.

- **The large mobile steel bearing (Drawing 3)**

To ensure an even weight distribution to both rolls of this bearing, a joint is arranged between the rolls and the head plate of the bearing, analogical to the original. The base plate of the bearing (Pos. S1.4) and both rolls are assembled similar to the small mobile steel bearing. The base plate of the joint, consisting of (Pos. S6.1 and S6.2) is to be placed onto the rolls. In (Pos. S6.1) again boreholes have to be drilled for the roll guiding. (Pos. S6.2) is to be soldered from 0,3mm metal sheet, to keep the boreholes (milled recesses at the original) not visible from above. Also in this case the boreholes eventually need to be widened a bit to ensure some tolerance. Now the locating bar (Pos. D3) has to be soldered to the base plate. The head plate consists of (Pos. S7.1 and S8) and is corresponding to the other steel bearings.

- **The rubber layer / the elastomer bearing (Drawing 4)**

The rubber layer bearings are relatively easy to tinker. The holding constructions (Pos. G1.1. or G1.2) are soldered to the base plate of the bearing (Pos. G1.1. or G1.2), according to Drawing 4. The bearing body (G4.1 or G4.2) is to be made from hard rubber or plastic (small bearing 2mm, large bearing 3mm) in the specified dimensions, shown in the list of materials. Basically, brass is also possible but using a material, which is similar to the original, would be more harmonious.

The holdings (G2.1 or G2.2) are to be soldered to the head plates of (Pos. G3.1 or G3.2) – this time further outwards. The bearing body has to be glued between the holdings of the base plate.

Subtitle:

### **Marginal Consideration**

At the original the following footpath coverings are usual

- Chequer plates or dimple plates
- Steel gratings and
- Wooden pavement

The implementation of wooden pavements into the model was already described in Part 2 (012-Express No. 5, March 2008), therefore only some special features of “modern wooden pavements” will be described in the following.

The steel gratings made from thin sheets are hardly feasible in larger scales. Etched sheet is out of question, because at a thickness of at least 0,5mm (Gauge 0), 0,7mm (Gauge 1) and nearly 1mm (Gauge 2) a grating similar to the original (around 0,1mm) cannot be etched.

The attempt of finding chequer plates or dimple plates was no success, so unique templates had to be created. The so-produced plates are meanwhile also available at “Fiedler Modellbau”.

Commercial rhombus plates should not be used. The temporarily dammed water inside the rhombi would increase rust and in wintertime the risk of sliding would occur because of the icing. On the original therefore only special rhombus plates with water drainage holes and a 5mm diameter were used. To my knowledge such plates are not yet available for modelling purposes.

Subtitle:

### **Chequer plates and dimple plates**

For creating the templates a measurement of a sample of a today’s chequer plate and one of a 40 years old dimple plate was taken and scaled for Gauge 0, 1 and 2. **Picture 7** shows the 3 samples of the chequer plate and allows estimating the size. The also available dimple plate for all 3 Gauges is shown in **Picture 8** at the prepared footpath covering for a small Gauge 0 bridge. At model railways in Epoch III the use of dimple plate is recommended. For Epoch IV and V both kinds of plates can be used.

The low span between the footpath girders is easily span at the original by 5mm plates. To avoid a slack flow between the footpath girders, caused by a thick coating, usually profiles or spacers are welded underneath the plates, which ensure the drainage of water along the bottom flange of the angular profile of the footpath girders (**Picture 8**). In some cases also pieces of wood were inserted between the footpath girders at intervals of 80cm and serve as spacers. The plates were installed in a handy length of 1-2 metres. To my knowledge, the plates at the original are just applied to the footpath girder or attached by welding or screwing them.

Subtitle:

### **The wooden pavement**

New steel bridges usually are delivered with a footpath covering made from chequer plate, dimple plate or steel grating. On new bridges a wooden pavement is a special case. Here the wooden planks with 35 – 50mm dimensions are just put directly on top of the footpath girders. To ensure water drain mostly a gap of around 1cm was left between each plank. To ensure easy handling the wooden pavements are manufactured at a length of 1 – 1,5metres for the most part. Partially the gratings are just applied and sometimes screwed on (by using a screwed flat steel band for example).

Subtitle:

## **Bridges in Gauge II<sub>m</sub>**

All bridge systems, which have been described for Gauge 1 so far can also be used for Gauge II<sub>m</sub> without any problem. **Picture 9** shows a similar model bridge of the “Harzquerbahn”.

The service footpaths, however, should be adapted for Gauge II<sub>m</sub>. Before ordering, additionally, the width of cross beams and transversal steel girders have to be examined.

For low laying tracks I recommend to use cross beams and transversal steel girders of a width according to Gauge “2“, at least.

- The service footpath(s) for Gauge II<sub>m</sub> is considered to be: usable footpath width = 3,3cm (at the original 75cm);
- Footpath girder analogical to Gauge 1 profile U7x3 (U160 at the original);
- Girder for footpath cover = angle 3,5x3,5 (angle 80x80 at the original);
- Guardrail posts and hand rail = angle 3,5x3,5;
- Knee rail = angle 3x3 (angle 70x70 at the original)

For a better understanding the service footpath for Gauge II<sub>m</sub> is illustrated in **Drawing 5**.

So far the presentation of our system of building bridges. This should allow the dedicated model builder to transfer an appropriate example to a model without any problem. Bridges are always a glance on every layout, especially if they are constructed in accordance to the original. Dear readers, we do hope, that our articles have given essential inspirations to you. Mr. Fiedler would be pleased to be at your proposal for any questions concerning the bridge system (see box).

**Source for bridge components in different gauges and further information:**

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**Picture Headers:**

Picture	Text
Picture 1	Fixed bearing on a riveted steel bridge. The visible component between the conical cast parts (head plate above, base plate below) is in accordance with the locating bar used for the bridge system
Picture 2	The lengthwise mobile bearing on the same bridge. The both rolls are fixed by cast pins, on the bottom by the base plate of the bearing and on top by the head plate. This was too complex for model building, so a construction was chosen, where the holding was fixed onto the rolls and grabbed into recesses of the base plate and head plate bearings. In addition, the joint between the rolls and the framework bottom chord can be recognized.
Picture 3	The small mobile roll bearing fixed in a Gauge 1 bridge
Picture 4	The small steel bearings of the Gauge 1 bridge
Picture 5	The large steel bearings of the Gauge 0 steel bridge. The visible calibre proved its value at soldering the guiding to the rolls of the mobile bearing.
Picture 6	The already built in small mobile roll bearing at the Gauge 1 bridge
Picture 7	Sample of the etched chequer plate for the footpath cover in Gauge 0, 1 and 2
Picture 8	The railway master just decided the reworking of the dimple plates, which should be used as footpath cover. Be careful when cutting the dimple or chequer plates by using a metal shears: feathering is very difficult to eliminate or needs to be filed off laboriously. A simple jigsaw would suit better!
Picture 9	Similar bridge with continuous gravel bed at the narrow Gauge "Harzquerbahn" in Elend
Drawing 1	System construction of the bearings
Drawing 2	Small steel bearings in Gauge 1
Drawing 3	Large steel bearing in Gauge 2
Drawing 4	Rubber layer bearing in Gauge 1
Drawing 5	Border path in Gauge 1, height of main girder 1,2m

Pages in Original German Version: 56 – 61

Category:

**Original & Model**

Bar:

**Testing of the Live Steam Locomotive 140 C 287 by Aster**

Header:

**A snuffling French lady with high standards**

Introduction:

**The 140 C 287 was one of the most popular locomotives on French rails – we tested the Gauge 1 live steam model by Aster**

Author: Markus Henne

Pictures: Manfred Weihrauch, Markus Henne

Subtitle:

**History of the original**

The 140 C was delivered in three large series from 1913 to 1920. The first series of 70 locomotives was produced in France by the companies *Schneider*, *S.A.C.M.* and *Fives-Lille* for the “*Compagnie des chemins de fer de l'État*”. The 200 engines in the second series were also built for “*État*” and, due to a supply shortfall of French industry as a result of the war, they were produced in Great Britain by the companies “*North-British Locomotive Corporation*” and “*Nasmyth-Wilson*”. During the transport by sea 6 locos out of this series sunk by a torpedo attack. The 3rd series was ordered by the war ministry for transporting heavy railway guns, the 70 engines were produced in Great Britain by “*Vulcan Foundry*” and “*North-British*”, but hardly any of them came into operation as a war locomotive.

The locos maximum speed was 80km/h and they hauled freight and passenger trains and some express trains. During their period of service several changes were made, such as “*Lemaitre*” chimneys, different feeding pumps and smoke box doors. The company Aster offers the 140 C in two variations, the 140 C 287 and the 302. The model for our test, the 140 C 287 was built by the company “*North-British*” and was set into motion until September 1975.

Subtitle:

**Included in delivery**

For transporting purposes the 140 C was packed in a solid metal box, which is normally not included in the standard delivery. Some small fixed spanners and Allen wrenches were included as well as a device for oil spraying and a handle for the pump. For the operation of the locomotive not only operating material is needed, but also a heating-up fan as well as a fuse is required. Items like this should be a part of every well-managed “*Live-Steam-Household*”.

The documentation is very detailed and in addition to the operating instructions for the finished model, a complete manual with drawings for the accessory kit is included. This is very useful for further repairs. The complete documentation is in English, unfortunately for all German readers (except a short introduction concerning the history of the 140 C).

Subtitle:

**The undercarriage**

The frame of the 140 C consist of rugged 2mm sheets of steel. The bearing jewels for the 7mm-thick drive and coupled axles contain plain bearing bushes, which ensure a very durable construction. Each

axle bearing is equipped with a coil spring, but the leaf springs are only indicated. The bearing of the rear axle does possess shortened springs, because the front of the engine is more heavy than the rear, so the rear otherwise would be too high. This is why the coupled axle in the rear only adds little to the tractive effort. Therefore it is suggested in the English manual, that two handmade weights should be installed inside the cab and the springs of the last axle should be replaced with longer springs. This measure improves the weight distribution as well as the pressure onto the last axle. In view of the already existing driving power (more on this later) this change is not at all mandatory.

The pusher axle is lead by a spring-mounted drawbar. All wheels are equipped with stainless steel tyres. The flange height is approximately 1,7mm, as with all newer Aster models. At older Aster locomotives the flange height is 2,1mm. Just for the sake of completeness: the wheels are not isolated, which should not mean any deficiency for Live-Steam operators

Predominantly all parts of the drive and control system consist of delicately finished cast parts, they are solid, delicate and detailed, at the same time. If you look closely, you will notice that some parts of the drive system are cut from metal sheet, such as the wings, for example. This is probably a recycling of existing parts in order to reduce costs. The bearings, which have to take up higher forces, are equipped with plain bearing bushes. Everything is running precisely and smooth.

The “Heusinger” drive can be moved with the help of a lever on the left side inside the drivers cab: backwards, neutral, forwards with small charging and forwards with high charging. The lever can only be thrown by tearing off the half rear roof. Everyone who wants to operate this lever frequently should lengthen it to the rear.

What is essential for the performance of the engine is the accurate work of cylinders and pistons and in this concern the company Aster offers a very high manufacturing quality for many years. The cylinders are made from bronze and each piston has two piston rings from PTFE bronze. The distribution regulators are carried out as shell-shaped regulators and are also built in mature technology. As a nice delicacy, a drainage cylinder is implemented, which can be operated with a lever on the right side beneath the cab. The extrusion lubricator for oiling the cylinders is placed beneath the circular sheet-plate in the front. At this locomotive Aster has blackened the lubricator and the alcohol burner electrically, so it is hardly noticeable.

The first coupled axle does possess an eccentric axis for activating the driving pump. The quantity of water towards the boilers feed valve can be regulated with the bypass valve on the right side underneath the cab. An overrun of water is lead back to the engine tender via a flexible tube.

Subtitle:

### **The steam boiler**

The 140 C does possess a hard soldered copper boiler with two smoke pipes. On the back a stainless steel firebox with a flame deflection is mounted, so the fire is produced with an alcohol burner with three cups. This type of boiler requires a permanently induced draught, which results from the engines exhaust, the blower or a heating-up fan, depending on the operating condition. With the help of the induced draught the flames initially are drawn to the rear, then redirected to the top and then forwarded through the smoke pipes towards the smoke box. Aster calls this type of boiler “Type C”. It is relatively easy to manufacture, has a large volume of water and is a good steam generator. Furthermore the combustion regulates itself, the stronger the exhaust steam, the greater is the oxygen supply for the blowpipe and therefore the generation of steam. Contrary to gas fired boilers this boiler is practically indestructible. If the water should run out during the journey the flames become very small or even go off, caused by the lack of induced draught. Inside each smoke pipe there is also implemented a thin U-shaped superheater flue made from stainless steel. For further information see sketch 1.

The steam boiler has the following fitting:

2 safety valves, water level glass, pressure gauge, regulator valve, blower valve, water drain valve, boiler feed valve

Subtitle:

### **The superstructural parts**

The gentle reader may forgive me, but I will not start drawing a comparison of every single rivet or screw between the original and the model. For me the functioning of a live steam locomotive is ranking first, drivers cab, boiler casing and circuit are mainly made from brass plates and the manufacturing and the fitting accuracy in this concern is perfect. Also the various attached precision casting parts and cables are first-class. Equally the semi gloss painting and the etched signs are mighty fine.

Both, the rear extension of the drivers cab roof (safety grill) and the rear part of the roof can be removed rearwards.

The interior of the cab appears unusually tidy for a live steam loco. By dipping into the exploded assembly drawing, it is obvious what is hidden behind the boiler casing: firebox, flanges, screwing, valve bodies, tubing and the boilers feed valve. And even both safety valves on the top of the steam boiler are almost hidden behind the casing of the rear boiler. This looks great, but so much beauty has it's price: maintenance and repair will be more difficult. If, for instance, the ball got stuck in the boilers feed valve you normally knock against the valve body and usually you have solved the problem. But this does not work in this case. Here, a number of things have to be removed in order to come near the valve. Replacing a safety valve at other locos is a matter of seconds. In case of the 140 C the complete steam boiler has to be dismantled from the casing! (At the green model, the 140 C 302 the arrangement of the safety valve is different and it can be replaced easily).

Subtitle:

### **The Tender**

The tender contains a store of water and spirit. A hand pump is built into the water tank. The spirit tank has a lock valve underneath, where the so-called mire is located. The spirit level in the mire is always kept at the same height, so the wicking burner cannot be flooded. This function is similar to an automatic bird bath. For further information see sketch 2.

The tender has spring mounted wheel sets and beautifully detailed bogies.

The coupling iron between loco and tender can be adjusted in two positions, for driving operation the greater distance should be chosen. In addition, another three flexible tubes have to be connected, which are the water flow and runback and the spirit. Unfortunately, this process is still as fiddly as it was at 20 years old Aster locos. Meanwhile more elegant solutions with quick-release couplings are available nowadays. The runback tube, though, is dimensioned a bit too short and it hinders the pivoting of the front bogie to the left side.

The tender superstructure is very well done, too. Only one thing: it seems that for the sealing of the water tank on our test locomotive probably too much white silicone sealant has been used, this is visible at two small places on the back.

Like the 140 C almost all other Aster engines have been delivered without coal dummies in the past. Apparently Aster considers itself to be a locomotive manufacturer only and not a coal merchant. In my opinion an upmarket model like this should include a coal cartridge, definitely.

Subtitle:

### **The handling of the model**

As soon as all bearings are oiled, distilled water is to be added. In contrast to other Aster locomotives the 140 C does not possess a water-filling hole on the boiler. According to operating instructions the water should be pumped from the tender to the boiler with an opened blower by using a hand pump. In doing so the pump rod has to be swayed about 150 times. But there also is a convenient solution available: just stuck a piece of silicone tube onto the water dumping fitting on the left side beneath the cab, open the draining valve and the blower and press water inside by using a large disposable syringe. This method can also be used for aspirating the water while the engine is cold.

The extrusion lubricator has to be filled with special oil, used for steam cylinders. Be careful not to fill it completely to ensure that condensation is initiated. Now alcohol has to be filled in. Please make sure, that the lock valve is kept close, otherwise the mire will overflow.

The track is to be chosen preferably plane for the locomotive is manually operated. Otherwise there is always the risk that the train gets too fast on down grades and that it will get beyond control, immediately.

Before starting up the rear extension of the cab roof (safety grill) should be removed, otherwise it would be difficult to reach the control elements with your fingers. Anyone who drives frequently should replace the regulating valve and the blower valve control elements with levers that are protruding over the roof edge. Thereby handling will be a lot more comfortable. It would be nice if the company Aster would sharpen the shaft of the cone on the regulating valve, which would make the lever react more smoothly.

Now the heating-up is to be proceeded and here is a rundown of a short driving school:

Open the spirit valve, slightly open the bypass valve, close all other valves, the control lever has to be pushed forward. Put the intake fan on top of the chimney and activate level 1. Open the fire door and light up the wick, most suitable is a fuse. Close the fire door and switch level 2 on the fan. After a few minutes the manometer shows 3bar, the blower should be opened a bit and the fan should be taken off. Open the cylinder dewatering and open the regulating valve a bit, push the loco slightly forwards. Condenser water now is blowing out. Close the dewatering. If necessary open the lever a bit more, the train starts to move. Close the blowers. Adjust the speed by using the lever. Due to characteristics of the system adjusting the bypass valve is a little tricky, especially because the water gauge function is not always reliable. At least when a safety valve is blowing in short intervals, one can assume that the boiler has only little water left and the bypass valve should be closed for some time. With a little practice you can get a handle on this problem. If the train should be stopped, first the blower has to be opened a little and afterwards the lever has to be closed. Otherwise it could happen that the fire is distinguished.

Subtitle:

### **Test run**

The first drives took place on a layout in Bayreuth, Gauge 1 on wooden sleepers with a nickel silver rail profile by the company Schullern, at a minimum radius of about 3m. First, the 140 C should run in a bit and so it run for one hour with a light train. The locomotive ran quietly and without swinging. In between, several times it was checked, if the lubrication of the cylinders was working: just follow the loco alongside for a few meters and hold a mirror over the chimney. The condensation of steam always was slightly greasy, so the lubricator was working economically and steadily. Due to the warm weather no really visible steam plume was recognizable. Even while backing down the engine runs very well, which is an indicator for a properly adjusted control.

After some trips a few stress marks did occur in the middle of the rear axle. Apparently the wick burner is expanding because of the heat and is bearing against the axle a little. The two mounting screws were loosened and the burner was pushed to the rear for a few tenths.

Then a train with 14 Märklin wagons was attached, two- and three-axle. This was no real challenge for the 140 C, even on oily and slippery tracks. Travel time of 40 minutes with one filling of alcohol.

A few days later we went to Altdorf near Nürnberg. A layout in Gauge 2m, tracks by the company Thiel, brass on plastic sleepers, at a minimum radius of around 3m. A train set with 12 heavy, ball bearing four-axle wagons by the companies J&M, Wilag and Hübner was arranged, total weight around 44kg. In front of the 8m train-set the 140 C appears a kind of stranded. But we will show no mercy, so heating-up, dewatering (same procedure as written above) and now the lever is to be opened really carefully. And here we go, the 140 C started to move instantly and right off the bat – fantastic! The exhaust stroke and the rhythmic blazing up of the fire clearly can be heard now. Especially on a small grade the engine starts to snuffle hard, but got through this round after round for half an hour. The boiler is producing steam endlessly and the manometer display stays at about 3bar. This is an outstanding capacity for an engine of this size and weight.

Subtitle:

## Conclusion

Aster really did make a tightrope walk with the 140 C. On the one hand the high demands on a showcase model should be met and on the other hand the live steam enthusiast should get a raw deal. Generally speaking this had worked out fine, just some concessions concerning maintenance have to be made. Aster locos were never cheap, but in view of the offered quality and the low number of only 250 pieces (altogether with the 140 C 287 and the 302) the price is justified.

The company Aster had provided the 012-Express with a brand-new finished model of the 140 C 287 for testing and pictures without any restrictions, at this point we want to say: thank you very much!

## Distribution

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Finished Model SNCF 140 C: 5200.- €

Construction Set SNCF 140 C: 4250.- €

Picture Headers:

Text
At first sight the 140 C is hardly recognizable as a Live Steam Locomotive
Japanese high class workmanship: the 140 C certainly makes a good impression in the showcase, too
The drivers cab with blower, manometer, controller and water level
Accurately clinched rows of rivets are decorating the tender
The Bayreuth (Railway) Festival: the heating-up fan is removed – and off we go!
With every single rotation of the wheels the driving pump is pushing a few drops of water into the boiler
Traitorous tracks: the rear axle is bearing against the wick burner
Whether driver`s side or heaters side – the 140 C by Aster is in a good shape

## Technical data of the original loco

Vapour pressure	14 bar
Superheater	Schmidt Type A
Grill expanse	3,16m <sup>2</sup>
Heating expanse	172m <sup>2</sup>
Cylinder diameter	590mm
Drive wheel diameter	1,44m
Power	1400PS
Dead weight	65,9t – 68t (without tender)
Length	11,75m (without tender)
Length over buffers	19m (with original tender 18m)
Speed	Max. 80 km/h

## Technical data of the Aster Live Steam Loco 140 C 287

Scale / Gauge	1:32 / 45mm
Dimensions Length over buffers x width x height	611 x 96 x 135mm (loco and tender coupled widely)
Net weight	Loco 3,7kg, tender 1,5kg
Axle arrangement	1 D
Drive wheel diameter	45mm
Running wheel diameter	26,5mm
Tender wheels	30mm
Accessible radius	Min. 2m
Engine type	2-cylinder
Cylinder	Bore 12mm, stroke 20mm, dewatering valve
Piston ring	Filled with PTFE bronze, 22 at each piston
Control	Heusinger, max. charge 80%
Slider	Shell-shaped, max. stroke 5mm
Lubrication	Extrusion lubricator
Boiler	Copper boiler, type C, 220ml at a 70% charge
Operating pressure	Ca. 3,5 bar
Manometer	Spring tube manometer 6 bar, diameter 19mm
Water level	Glass tube, external diameter 6mm
Driving pump	Eccentric pump, bore 5mm, stroke 5mm, bypass valve
Hand pump	Inside the tender, bore 11mm, stroke 12mm
Firing	Spirit wick burner with 3 cups
Water tank	Inside the tender, 250ml
Alcohol tank	Inside the tender, 150ml

Pages in Original German Version: 62 – 67

Category:

**Layouts**

Bar:

**Modular Layout in Gauge IIm/IIf Part 2**

Header:

**Way Out for the Boulder Express**

Introduction:

**This time Franz Stellmaszyk is conducting us from the slate quarry to the locos homeland – Part 2 of the modular layout in Gauge IIm/IIf**

Authors: Franz Stellmaszyk, Wolfgang Oellrich

Pictures: Manfred Weihrauch

Anyone who believes that Franz Stellmaszyk suddenly would be unfaithful by getting lost in the “Harz” mountains is tremendously wrong. With his Boulder Express still the very own Eifel valley schist is carried away. Where the locos journey ends after leaving the slate quarry, this is what the second part of our article is about.

Subtitle:

**Springtime in the Eifel Valley ...**

After leaving the schist loading, the inner track with a double fuse panel is leading in a tight arc through a narrow pass. On a removable rear wall the solid and real Eifel valley schist is ranging into the background. A small pond is located near the rock face beneath a bridge, passes the telephone house and ends at the point where a boy is playing with his sailboat. In front of the telephone house, which is a replica of the previous model, the switch attendant is already waiting for his mission to start. The small dog on his side, lifting his leg to relieve himself, can testify that it was not solely the attendant who drained all the bottle cases, which are placed inside the telephone house.

With its entry to the narrow pass at the rock massive the schist carriage passes the striking tall model trees. Two of them are recognizable as larch trees with their individual cones. Trunk and roots were self-constructed by using real wood. The same applies to the fir trees on the edge of the routing, which are varying in size. Scenically we are visiting the Eifel springtime with its typical white flowering sloe hedges. Mainly real groves were used for modelling the bushes - amongst others “Turkish Thyme” suits good for this purpose. Flock coating material by Heki was taken to landscape bushes and trees.

Slightly hidden behind the trees in the forest a raised hide is to be seen – the pulpit was made from roots.

In order that the background does not appear too solid, the schist wall was skilfully interrupted by the use of fieldstone stonework and fair-faced concrete walls. All walls emerged as plaster casts from specially manufactured silicone moulds.

Subtitle:

**...On the flea market...**

Before the 99 582 reaches the locomotive shed, a flea market is visible on the right side of the track. The various visitors seem to be very much interested in the railway relics, which are offered for sale. Besides signal boards, track obstruction signals and advertising posters also locomotive signs are offered here. Of course in the right scale – manufactured and delivered by Karl-Heinz Mletzko. Right next to the flea market a fenced deposit for construction material is visible. Who might be the man with the flat cap and leather jacket, examining the useful goods – this is left to the reader`s own imagination. Anyway, in between all kinds of junk, like rusty sheets and old oil drums also some building blocks (Bloxx) as well as a brand new moped can be found – whether this one is for sale, too is beyond our knowledge.

Directly behind the flea market the coal storing room is situated. Although the conveyor belt will soon put an end to the miserable drudgery, coal scooping still has to be done by manpower. No wonder that Manni and Franz are suspiciously looking at dressed to the nines Erwin, who once again sits in the office of the locomotive shed, phoning for hours, while outside real hard work is done. Bad luck for him when he`d be back!

Besides the coal storing room an also completely self-constructed rotating water crane is placed.

Subtitle:

**...Subsequently bound for home...**

The routing is running to the right, through a small locomotive shed and finally ends at a turning platform. This is the connection to the upper track and ensures a steady driving on the modular layout in addition to numerous shunting operations ... provided that one manages to wrench oneself away from the various details in the rear edge of the layout!

The locomotive shed alone is a feast for the eyes and testifies the artistic skills of the creator. The shed is based on a wooden framework construction, pinned together with wooden bolts. The frames were built by using more than 1500 real bricks (Bloxx). The locomotive shed contains a complete interior decoration with all necessary equipment and tools for simple repair work. Also integrated is a separate room: the foreman`s office, which is a replica of the suggestion from the railway journal. The front door of the shed is electrically powered by a “Conrad” engine, all other components are self-constructed. The rail power is controlled in a way that driving in and out only is possible when the gate is completely open.

The roof of the shed, which was in need of repair is currently being fixed by roofers. Not only the material and the working attitude of the figures but also the scaffold of the shed`s sidewall are giving a realistic look to the scenery. As a connector between the scaffold parts, so-called scaffold chains are used, exact replicas of the original, known as the world`s smallest chains. On the scaffold a construction team is carrying out the necessary mending jobs on the outer wall of the shed. Yet another record: the scaffold has got the smallest semi-automatic extension ladder in the world.

Anyone how has not had the opportunity to watch schist mining by himself should necessarily meet Franz Stellmaszyk on one of his model railway exhibitions. He knows a story about every single scene on his modules, they are highly entertaining and – also a remarkable record!

Dates for exhibitions with Franz Stellmaszyx´ s layout can be found on his web site at [www.miniatur-rekorde.de](http://www.miniatur-rekorde.de)

Recently, the creator wants to thank Mr. Dipl.-Ing. Braun (Technical Standards Authority) as well as Mr. Leyer as the head of the “Sinsheim Fair” for his support during “Faszination Modellbau” in 2008.

#### List of Materials used and Producers:

Landscaping material	Heki
Raw figures	Preiser
Adhesives	UHU
Brass profiles	Wilms Metallmarkt; Conrad
Natural bricks and stones for locomotive shed and building of the marked-out-route	Bloxx
Fieldstone forms	Anitadecor
Material for silicone casts	Heraeus/Hanau
Landscape pictures, background	JoWi Wischermann
Etched signs for vehicles and flea market stand	K.H. Mletzko
Transformer, amplifier	Conrad
Transformer building and design	M. Schäfer
Locomotive sounds at customer`s option	Dietz-Elektronik

#### Picture Headers:

Text
The Saxon IV-K on its way out of the slate quarry ...
...and finally reaching the flea market at the opposite side of the layout
The track plan for the 6-part modular layout. The arrangement of the tracks ensures not only shunting operation but also a varied exhibition operation. Top right: the Iif-track (H0-tracks)
The narrow pass with the telephone house and the signalman at stand-by-position
The flea market with interesting railway relics; besides the well assorted “DIY”
Studious fixing work on the roof of the locomotive shed; in front: the smallest extension ladder with semi-automatic function worldwide. The open shed opens up a view onto the various details.
Construction work at the also “slightly damaged” brickwork of the locomotive shed
The 99 582 fills up its coal stock at the small-BW
Pole climbing needs practice: it is much easier though with the help of the required climbing support
One of the various details of the layout: the foreman`s office with “frequent caller” Erwin
Always under observation: the staff inside the foreman`s office
The „Belle Saxon“ at its home at closing time: leisure-time!

Pages in Original German Version: 68 – 71

Pages in Original German Version: 68 – 71

Category:

**Modelling**

Bar:

**The Self-Constructed “Prussian S9” in Scale 1:43,5**

Header:

**Powerful Prussian Lady**

Introduction:

**After the building of several B-couplers Bernd Molnár ultimately started the cream on the cake – the construction of the S9 in Gauge 0**

Author und Pictures: Bernd Molnár

For me the most important facet of the model railway hobby is the self-construction of locomotives, wagons et cetera, which means actually I rather be a model builder than a railway modeller.

My preference for B-couplers (amongst others due to the lower number of required spoke-wheels) and the building of a BR70, a P 4.2, a Saxon IV T and a Prussian T 5.2. had put the idea in my hand to build the quite mighty S9 for my Gauge 0 vehicle fleet.

Subtitle:

**The Original**

At the beginning of the last century the need for stronger locomotives than the S7 increased. Since their well-known gouts were some reason for mistrusting the existing steam locomotives, it was decided to use the wet steam version of the B-coupler with 4 cylinders and compound effect. Except for its start-up problems the engine showed a good performance, however, the pulling force for the increasingly heavier passenger trains soon did not suffice any more. A total of 90 locomotives altogether was built by Hanomag and Grafenstaden, but only one of them was taken into the stock of the German State Railway. In accordance with the Treaty of Versailles many locos had to be handed over to French and Belgian facilities.

The locomotive was equipped with the 2'2'T31,5 tender and for this reason it was 21,86 meters long, the driving wheels as well as the coupling wheels had a diameter of 1.980mm. Particularly noticeable was the extremely high chimney, the conical boiler shell and the huge ash pan (source: Obermayer, Steam Locomotives).

Subtitle:

**The Model**

The following does not meant to be a construction manual. I just want to give a few hints on how I am building my models.

As a basis I had a scale 1:87 drawing by MIBA, a drawing scaled 1:60 from the "EISENBAHN-Magazin" and various photographs on my hands. In addition, I had to offer a larger portion of experience concerning how to build locomotive models.

The framework is consisting of 2mm brass plates, where the necessary recesses were drilled, milled and filed in. The front buffer beam and the rear connection underneath the cab were hard soldered, to avoid that everything is falling apart while soldering the small parts. At the trailing truck area the frame was rejuvenated by 4mm to ensure the adequate swing latitude for the long drawbar of the trailing truck.

For the boiler two brass pipes of a 40 and 44mm diameter were soldered into each other. Therefore a hot flame is required, because the large brass parts do bleed off much heat. At my Unimat 3 and its maximum width of 200mm the conical turning of the boiler shell and the trimming of the area between boiler rings and smoke box were quite tricky, but finally it has worked. The riveting replicas on the smoke box had to be pressed into the bronze plate by using a small sewing wheel (attention: you only got 1 try!) and afterwards they had to be cut to size and glued into the trimmed area of the smoke box. In the same way I assembled the “riveted walls” on the standing boiler. The smoke box door, the steam dome and the chimney were manufactured from solid metal, for the safety valve and the boiler washout plug I used cast parts. I cut recesses into the bottom side of the boiler to make room for gearing and wheels and for having the possibility of removing the body at all.

The cab is consisting of 0,5mm brass plates, where the finished window frames with their overworked external contour had been soldered to. Afterwards the window openings were sawed off and filed.

The tender 2'2'T31,5 was also made from 0,5mm brass plates. The rivets here were emulated with the help of a borrowed rivet-stamping device. With a little practise work like this is easily done. The tender is running on a Diamond-bogie by the company Krapp. Inside the tender a simple light module for the rear lamps is located. Via a tumbler switch, optionally one, both or none of the lamps can be switched on. The remaining interior is completely covered with a foam rubber block to avoid a drumming noise while the engine is running. The effect is excellent!

All parts of the control system are made from silver plate. In spite of the relative bigness this is a miserable mess. The crosshead is drilled, filed and soldered from one piece of 4mm brass. A real celebration if everything is moving like it should.

The leading bogie has a lateral tolerance of 3mm and the axles have a three-point bearing to ensure a good support.

The drive of the engine takes effect on the sprung driving axle, which is connected to the gearing from spur gears and helical gears, so no self-locking may occur. A torque support arm holds the gearing in the necessary position. A Faulhaber engine from former East German production creates the rotary force that operates the gearing via the drive shaft.

The electricity discharging is resulting from some PILZ contacts. They are located at the first leading axle, the gearing axle, the coupling axle and the tender axle. In front of the engine another light module for the two front lamps is located. With the help of this luxury I make do with just a bipolar loco - tender connection.

Subtitle:

### **The Finishing**

After cleaning and degreasing the loco was sandblasted and afterwards primed with light grey car paint out of the aerosol can. After drying, tender and body were airbrushed by using the

new black semi gloss aqua-colour paint by Revell (No. 302, water-based). In my opinion this product serves best for our purposes, it dries quickly and the colour is beautiful. The frame received an airbrushing in RAL 3002 before the wheels were built in. Before, the frame and the wheels were restrainedly weathered by using dark brown and black colour.

The excellent etched brass signs came from Becker-Modellbau. The windowpanes received a margin of around 0,5mm, so they are almost flush with the outer edge of the windows. The tender as well as the locos body also received a very slight weathering. During the operation period of these locos the firemen had to remove the smudgy oil traces all day long. Real coal in the tender, a poker for the fireman and staff for the drivers cab will complete the finishing.

After a complete construction time of 22 months, now it is standing in front of me, in all its ugly loveliness. The test drives on our association layout in Sande have shown that the loco possesses a very balanced driving behaviour. The wiggling on the track, which normally is typical for all B-couplers, is missing completely. And the noise while crossing turnout routes is simply wonderful ... and now I am sure that the work was worth it.

Well then, where are the drawings for the next project?

#### Box:

Anyone who wants to take a look at the loco in their everyday operation should visit the "ARGE Große Modellbahn Weser-Ems e.V."

Adress: Breslauer Straße 9a, 26452 Sande.

Info: [www.spur-1ns.de](http://www.spur-1ns.de)

#### Picture Headers:

Text
The completely soldered loco frame
The chassis with its Faulhaber engine (still without shaft)
The still not painted body of the loco
A look at the details on the front area of the boiler, with pre-heater and feeding pump
The priming of the locos body is made by using car primer and an aerosol can from the workshop, the remaining work on the body will be carried out
The back of the tender with buffer brackets and lanterns
The fireman`s side of the loco at the finished model; a truly massive B-coupler
View to the drivers side of the S9; clearly recognizable here – the excellent weathering traces
The completely mounted loco with its delicate etched signs
The S9, ready to leave "Sanderfeld Station" with its compartment train – a vision of delight

Pages in Original German Version: 72 – 79

Category:

**Technology**

Bar:

**Application of servomotors for model railways**

Header:

**Versatile Whisperers**

Introduction:

**For quite a while now servomotors are in use for model railways, too. Klaus-Gerd Schoeler has tested some of them and describes their application for model railways in the following article.**

Author and Pictures: Klaus-Gerd Schoeler

Illustrations: Manfred Weihrauch

Until a few years ago it was common practice to switch signals and switches with magnetising coils. Who does not know the familiar clarion “clack” sound of track-switches, well known since the early days. Even today these rugged but not ideal drives are to be found in the range of the market leader.

In the course of time, then electromotive drives spread out, which were more or less noisy and at least set switches and signals in a more slowly motion. For instance Feather, Haase or Bühler drives were assembled to many layouts. The disadvantage was and still is that always quite expensive switch decoders were needed. Another point is that velocity of the drives and thereby the manipulating speed of switches or signals could only be influenced by the tension. The company Hübner was the first mass producer who relied on this technology and supplied their electrical switches with a small but loud motor drive.

Modelling servos or RC-servos, as they are also called, used for airplane and ship modelling for decades, are an excellent alternative to the motor drives, particularly because they already had proved their reliability. These modelling servos are available in different specifications and sizes at modelling shops or electronic postal shopping facilities. Due to the high production volumes the RC-servos usually are available for good value. What was missing so far were appropriate activating electronics. For some time now special activating components for us railway modellers are available. Decoders for the use at digital systems with DCC or Motorola format were the latest development.

Subtitle:

**Mode of operation**

The RC-servos are characterized by a controlled movement, which means that the RC-servo has a feedback function and tries to reach the pre-selected position. So “getting stuck” is almost impossible as long as no blockades are causing any trouble.

The RC-servos need a supply voltage of 5V DC (regulated DC voltage). Via an impulse input the status of the small DC motor is defined. The duration of every 20ms sent pulse is between 1ms and 2ms and is transferred to the deflection by the help of the integrated electronics. At

pulse duration of 1.5ms the RC-servo has reached its central position. A small potentiometer on the drive shaft is the feedback to the integrated position control, so that the electronics always know, how the current position is. If any difference between actual value and set value occurs, the electronics will correct it immediately. At up to date RC-servos the duty cycle do posses a wider range and therefore allow further regulating distances.

Subtitle:

### **Not all servos are the same**

When selecting the RC-servos a few things should be paid attention to:

- The larger an RC-servo is, the more accurate and uniform usually the rotation is, because gear and feedback potentiometer are laid-out better and they are often more low-priced
- RC-servos with metal gear and ball-bearing are generally more expensive, but are running softer due to the complex mechanics
- If a miniature RC-servo is required usually a high quality one should be used
- RC-servos with „Fail-Safe“-function should not be used, for they fade to rest or emergency position at standby or fail-safe function
- RC digital servos are working very accurate, but do consume significantly more electricity and often do not support the stand-by mode

The tests have shown that the high-precision RC-servo by Uhlenbrock and the model craft RS3 as well as the ES05 by Conrad are proved of value. Also the FS100 by Robbe and the standard RC-servos by Graupner are offering an excellent price-performance.

For the present report we were provided with servo decoders from MBtronic, XR1, Uhlenbrock and ESU, in addition there are further servo decoders available as construction sets or finished products.

With its logics and software many more options are possible in addition to speed and end position. So switches, signals, water cranes and other features can be operated or switched, in accordance to real operation.

The usage of an RC-servo and a servo decoder has to be distinguished. If an RC-servo is to be used for static purpose only, like switching of signals and switches, both decoder and RC-servo can be large-scaled. But if an RC-servo and a control unit have to be built into a loco to lift and bring down a holder for the overhead contact line, then the components have to be chosen smaller. Such a servo and its decoder also should behave like a real loco decoder, which means they should be controlled by using the special function buttons. At present, those qualifications are only fulfilled by the XRI “j-motion”.

For static usage it often plays a role, if additional contacts have to be switched, such as the frog polarity. In this case it is benefiting if potential-free contacts are available. MBtronic offers an additional blank, which is completely breaking the connection to the frogs during the circuit and activates it appropriately as soon as the final position is reached. This avoids short-circuits, mainly at DKWs and narrow guided switchblades. ESU offers the frog polarisation via a so-called “SwitchPilot”extension, which is able to convert the contacts at the end or in the middle of the regulating distance, depending on the parameterisation. Hereby two contact sets can be switched at a time to ensure the frog supply by raising the flow of electricity.

At signals in Gauge 0, 1 and 2 an automatic train control system mostly is of minor importance, because automatic drive is rarely used. Here decoders without any additional switching contacts can be used. Therefore wagging of the mechanical signals (or level crossing barriers) is a nice feature at decoders by ESU, Uhlenbrock and XR1. At MBtronic decoders this function already is in preparation.

Also useful is the ability of some decoders to carry out several freely programmable final positions. At the Uhlenbrock decoders altogether four positions are offered, so moving of a coal or water crane is possible, similar to a real example.

The “i-motion” by XR1 serves best for special applications, an integrated computer program helps to graph and simulate a characteristic line, which is extremely handy, indeed. Mr. Buschfort from the company XR1 is actually overworking the firmware for the decoder at the moment to achieve a more gentle and more evenly turning at free characteristic line operation.

The ESU and Uhlenbrock decoders both come with a plastic box with an imprinted configuration of the plug connectors. At the MBtronic and XR1 decoders it is useful to sign the signal-pins of the RC-servos with a small drop of nail polish at the PCB, to avoid placing the plug connectors of the RC-servo in the wrong direction, which otherwise could happen in the heat of the moment.

Important for all special functions, such as the wagging of wing signals, is a mechanical smooth running. We had the chance to test the wagging of a main signal from Saalbach / Müllermodellbau. The accurate manufacturing of this signal ensures an extreme smooth running, so the wagging goes on without bucking and thus does not destroy the illusion.

Subtitle:

### **Tips for assembling the Servo**

Uhlenbrock delivers their RC-servos with restraint ironing, for other servos such an assembling aid also is available. Self-constructed holders made from aluminium angle profiles also can easily be built true to scale. A local metal working company certainly will cut some angle parts on the mitre saw for little money.

The extremely detailed signals from Saalbach/Müller require a rigid mounting at thicker boards. A fixing aid made from a piece of brass with thread (M5) inside and a soldered nut on the other end allows the fixed tightening to the bottom of the rod. Therefore a 5mm hole from the top and a 10mm hole from the bottom are necessary. Afterwards the signal is standing rock-solid for its further switching operation.

The regulating wire of the signal is not to be directly placed inside the rudder horn of the RC-servo. Instead, a brass wire, which is to be exactly fitting into the holes of the rudder horn, has to be bent and connected to the regulating wire by using a terminal strip. The advantage is a simple exchange of the signal and an uncomplicated fine adjustment.

During assembly respectively assembly preparation make sure that a preferably large regulating distance of the RC-servos is given, which means as far as possible one of the inner wholes of the rudder horn should be used. This has the distinct advantage that movement is running very evenly and, because of the shorter lever arm, more power is available.

At the switches I added a bypassing axle to the mounting angle for the RE-Servo. Hereby the translational movement can be generated for switches from Hosenträger and HEGOB, even through thicker boards by the help of a massive pull rod. Again, the blade regulation needs to be adjusted optimally to the maximum deflexion of the RC-servo. One advantage is that the RC-servo together with holder and pull axle rod is easily to be built in or dismantled, if ever necessary. At the pull axle rods it is helpful to bend a “loop” to avoid stronger regulating forces and get an area of relief for any cases of emergency. Of course, the regulation wire needs to be chosen according to the regulation forces. At a smooth running wing signal like the one from Saalbach Modellbau a 0,8mm brass wire will suffice but not on rough-running switchblades, in this case a 1mm steel wire will be necessary.

For adjusting or the initial start-up it is advisable to press the RC-servo to the central position. A middle position for the regulating distance and the desired rotation has to be chosen as well. The reasoning behind this is that partially the RC-servos are starting at the chosen positions or at the middle position and, if you follow this advice, nothing serious will happen.

All the servo decoders can be controlled with the Motorola and the DCC format. In order to avoid needless warming of the electronics the servo decoder as well as the added servomotor should not be run with digital power, so using a separate power source would be helpful. Details can be found in the description of the various servo decoders.

Subtitle:

### **Programming**

If the servo decoder is programmed via a central DCC unit an additional supply has to be turned-off, all least at Uhlenbrock decoders, otherwise the CV value cannot be read back.

MBtronic is using an in-situ programming with buttons for their servo decoders. This is very convenient because the regulating distance as well as the speed can on-site precisely be adjusted. Only for assigning the switch address the corresponding button on the central unit or a connected throttle has to be pushed

The “i-motion” decoder by XR1 is fully effected by PC programming, unfortunately the fine adjustment has to be made by using the PC, here. Using a notebook would be helpful. It is recommended that in any case the rough programming is already made previously or to simulate the movements.

At ESU and Uhlenbrock decoders the programming is made via the programming track exit and a classical CV programming. For ESU decoders furthermore “Programming On the Main” is possible with adequate central units or via three buttons on the decoder. I chose the handy “Funky control” for fine adjustment and the CV programming, so you are always close to the action.

Subtitle:

### **Conclusion**

RC-servos and servo decoders are offering an excellent alternative to the normally used motor drives or even magnetic coil drives. Anyone who built in the first RC-servo and saw the great advantage of this technique will soon find new possibilities for motion controls with

the help of those small power dwarfs. Possibilities like letting a “Märklin” excavator turn and pivot on the loading cargo quay or at the scrap yard or slowly closing the door leading to the locomotive shed right after the loco had left. In addition, the costs of a RC-servo and the servo decoder are usually lower than for combinations of switch decoder and conventional gear motor.

All of the servo decoders left a mark, altogether. Neither of them is able to cover all the requirements, so the selection may depend on the assignment of tasks. Best would be to purchase just two or three of those quite inexpensive RC-servos and see, which of them suits best for the practical use. The main characteristics of the servo decoders are listed in the summary table, so a rudimentary comparison can be made previously.

Besides the basic functions, the various decoders are offering additional features, so prospective buyers should choose the RC-servo and servo decoder, which suits best for ones own application.

In general, the descriptions for the servo decoders can be found at the distributor`s web sites, so the prospective buyer can get a picture previously. XR1 also offers the programming and simulation software free for downloading.

While almost all the recent RC- servos are having a regulating distance of 180°, the servo decoders are keeping to the old specifications and are offering a regulating distance utilization of around 70°. For some applications a larger regulating distance would surely be profitable. XR1 is already working on an extension. At MBtronic the area can be enlarged carefully.

While running micro RC-servos cautiousness is necessary in any case and breaking the mechanical limits have to be avoided. Otherwise cogs inside the gearbox will be destroyed.

If you are interested in the functioning of servos, further information is available here: <http://www.electronicsplanet.ch/indservo.htm>

At this point I would like to thank the manufacturers for their support and furthermore I want to wish all readers a successful and joyful testing and insertion of this technique.

**Picture Headers:**

Text
The operating principle of the RC-servo at an example of a mechanical signal: gentle movement including teetering function
PCB and components of the „WA5“ servo decoder by MBtronik
Left hand a completed relay and right hand a finished “WA5” servo decoder module from MBtronik
Programmer and RC-servos on a „WA5“ servo decoder by MBtronik
Various RC-servos (Conrad)
RC-Servo with holder on a wing signal by Saalbach
Self-constructed holder with RC-servos, various switching horns
Servo decoder „SwitchPilot Servo“ and relay additive „SwitchPilot Extension“ (placed left) by ESU
„i-motion“ servo decoder by XR1 with attached RC-servo cables and programming plug
Operating lever with “overload protection” and terminal strip for connecting the servo with the regulating wire
Large RC-servo with switching lever for working the switches
Test setup of RC-servos, connected to a servo decoder by Uhlenbrock
Fixing form tube for mechanical signals by Saalbach for installation in thicker boards
„SwitchPilot Servo“ by ESU with affiliated RC-servos
RC-servo for silent lifting and lowering of the pantographs in a SBB-E loco (Picture: C. Streit)

**Text for Box and Table****ESU SwitchPilot, SwitchPilot Servo and SwitchPilot Extension**

A glorious two decoders, that are able to run RC-servos, are coming from Ulm. The SwitchPilot is a universal decoder, which is able to control four switches or signals at continuous and pulse operation. For light signals even a soft change over to signal pictures can be programmed. Besides, this decoder offers two servo interfaces at separate addresses, which can run RC-servos. At large Gauge modular layouts such a decoder can be advantageously inserted for operating several things by remote control.

However, the SwitchPilot servo is a pure servo decoder. Here, the regulating distance as well as the regulating time can both be set up by using buttons or CV programming. At the ESU decoder the ability to multi-log is a standard feature, so the decoder is able to run on large Gauges via the usual control centres. In addition, this decoder also is to be set up by using buttons or contacts.

The power supply for the RC-servos can be generated from digital stream or via a separate supply. When switching on the digital supply a special circuit prevents from overloading caused by referencing servos. Unfortunately, tension cannot be switched off at the final position, here. This is leading to a large demand of electricity while using multiple decoders. Polarization of the frog can be made by using an additional module (SwitchPilot Extension). This module comes in the same box and is attached laterally.

Both decoders are equipped with RailCom, which means they can be back read at corresponding centres during the operation.

## **MBtronic WA5**

One decoder, which is able to control two RC-servos, comes from Wuppertal and it is also qualified for polarizing frogs via an additional module. The servo decoder and the additional relay module are available as a completed module or as an assembly kit. Anybody who is used to soldering work and wants to save a few Euro can safely choose the kit version. Assembly is well documented and can be performed uncritically. The programming and parameterization is made via buttons and can be site assembled right at the duty area on the chosen signal or switch. Railway modellers who do not own a DCC-control centre or do have fear of contact with decoder CVs or PCs will find their solution with this decoder. Deflexion and regulating speed can be easily adjusted via buttons. The programming for the decoder address is being made by pushing a button on the keyboard or on the control unit. This decoder also can purely be operated on an analogue layout. For adjusting the drive four inputs are available to connect the buttons.

## **Uhlenbrock**

The servo decoder from Bottrop is compactly structured and can be excellently used for regulating mechanical signals. The wagging function is easy to parameterize and reproduces movements true to the original. The wing signal by Saalbach was run with the following parameters:

CV regulating time: 25

CV teetering deflexion: 4

CV teetering constant: 30

Attention: While wagging, once or repeatedly a position underneath the end point will be approached (very authentic at barriers), the deflexion at signals should be chosen very small, though.

Applications such as the pivoting of water cranes and doors, where several end positions are desired (four positions in our example), are easily to be realised with this decoder. With its four or eight addresses this servo decoder offers a universal integration into the address field of the control unit. The integrated switching power supply for the supply of the RC-servos with digital or analogue electricity works efficiently and almost without any generation of heat. Innately, this decoder does not support the frog polarization. Where appropriate, an own solution has to be found.

Please note: While programming or back read of the CV no external voltage must be applied, it has to be disconnected or switched off before. The attitude change can still be easily tested, since the decoder is able to supply itself with digital supply only. The high-precision RC-servo offered by Uhlenbrock runs very smoothly and quiet and suits best for applications with medium regulating forces.

## **XR1 i-motion**

The decoder from Bocholt, which is designed very small, operates two RC-servos. It is possible to set it up in the loco address area to run loco functions like the programming of direction changing and function combinations. For programming a PC with an integrated

RS232 interface and a small programming interface from XR1 are necessary. With the help of this equipment the possibility is given for a freely programming of the movement characteristics graphically.

The standard movements are made sinusoidal, besides there is a movement mode for increasing rocking for swinging movements for example. The wagging function can be created via a free characteristic line. So totally realistic drives for raising and lowering of pantographs and shunting couplings can be built. Currently only some restrictions are remaining (address space for the Motorola switch format is not available, yet), a software update is about to be released in the course of this year, which will ensure working with a PC and a programming interface. The servo decoder generates the tension for the RC-servos with the help of a linear control system. Therefore either the stand-by function should be used for the RC-servos or the external voltage input with 8-10V DC. The servo decoder does not support frog polarization innately. The address setting for the switch area refers to the normal Motorola group of four, so the decoder is approachable via address 31 to the addresses 121 – 124.

**Table for servo decoders**

	ESU SwitchPilot	ESU SwichtPilot Servo	MBtronic WA5	Uhlenbrock Servodecoder 67800	XR1 i-motion
Number of servo connections	2	4	2	4	2
Digital system	MOT/DCC	MOT/DCC	MOT/DCC/SX	MOT/DCC	MOT/DCC
Adress area	Switch area	Switch area	Switch area	Switch area	Switch area and loco area
Adress value	1-256/ 1-2044	1-256/ 1-2044	1-256/1-2044	1-256/ 1-2048	1-256/ 1-2044
Power supply for servos	Optional	Optional	Separate	Optional	Optional
Individual power / total current of servos	250mA/500mA	250mA/500mA	cirac 150mA	700mA/700mA	
Standby at final position	Not specified	Not specified	circa 120mA	Not specified	Programmable
Internal release of the regulating distance	8000 steps	8000 steps	8192 steps	Not specified	8000 steps
Programming via	Buttons or CV via DCC control centre	Buttons or CV via DCC control centre	Buttons	Buttons or CV via DCC control centre	PC RS232-interface
RailCom-compatible	Yes	Yes	-	-	-
Updatable	Not specified	Not specified	-	Not specified	Yes
Plug connection to servos	2 x Standard 3-pin	4 x Standard 3-pin	2 x Standard 3-pin	4 x Standard 3-pin	2 x Standard 3-pin
Adjustable speed	Yes	Yes	Yes	Yes	Yes
Minimum/maximum time of circulation	1 - 16 s	1 - 16 s	0,1s - 90 s	Not specified	Not specified
Teetering function	-		Projected	Yes	Yes
Freely programmable movements characteristics	-	-	-	-	Yes

Frog polarization	Plug component	Plug component	Plug component	-	-
Switch-point for switching the frog polarization	Start or middle of movement	Start or middle of movement	Final position	-	-
Maximum switching current for frog polarization	2A at 30V~	2A at 30V~	5A	-	-
Switchable via external contacts	-	Yes	Yes	-	-
Special features	-	-	Opto-decoupled gate inputs	4 programmable positions	Rocking function, rotating direction reversible

Pages in Original German Version: 80 - 81

Category:

**Info-Express**

Bar:

**Summer holidays – of a different kind**

Title:

**Holiday-Express**

Six weeks of summer holidays – good times for school children and teachers, often bad times for the parents. How should we keep the half-pints busy over such a long period of time? Finally, our annual vacation for most of us is rather limited and therefore a prolonged sandy beach – sandcastle – beach games – spectacle is almost impossible.

The lucky ones do possess parents who are interested in model building and model railways – or in our case – auntie and boyfriend, who are brisling with creativity. In an instant an interesting project is brought into being and the adored little ones are convinced of the glory of building dioramas. Suddenly an unbelievable quantity of energy is released. Busily, wooden frames are screwed, expanded plastic slabs are cut and the tracks are laid and coated with broken stones. But, however, the cream on the cake is the maiden trip along this self-created “railway”. If also self-collected natural materials for landscaping are added, there is no stopping them. Our three “apprentices” Kathrin (11), Marc (9) and she-dog Luna (1) seem to be caught by the railway modelling virus; they even took an active part while hard everyday loco testing – Happy Holidays!

Title:

**NEM 806D Overworked**

Now it is official – also for railway modellers: the modern railway receives its own Epoch. Based on the decision of the BDEF task force “Basisnormen und Mechanik (AGBM)” the NEM 806D will be upgraded to Epoch VI. In addition, Epoch V receives a C period. The publication will be launched early next year. The new standard will show the exact timing in correlation to the colouring and affected loco types of the Bahn AG, Further information: [www.morop.org](http://www.morop.org)

Bar:

**7th Large Gauge Meeting in Schkeuditz**

Title

**Saxon Major Train Spectacle**

From 27<sup>th</sup> to 29<sup>th</sup> of June 2008 for the seventh time in Schkeuditz near Leipzig the meeting of Large Gauge enthusiasts was taking place, which meanwhile is known well beyond the Saxony borders. In the ancient tram depot and inside two large tents on the exterior area more than 200 exhibitors and distributors showed their products. They came to Schkeuditz from all over Germany, from Austria, Switzerland and France. One visitor from Canada surely had the farthest journey.

A good mix of complete railway layouts and locomotives as well as wagons in all current large Gauges was offered to the about 4000 visitors. In the exterior area also steam-powered large Gauge garden trains were presented. The young visitors had a lot of fun and enjoyed a ride with the small train.

Once again, the members of the IG Modellbahn Schkeuditz e.V. did a good job with this great exhibition. This was a wonderful weekend for all involved parties. All this was supplemented by an evening sightseeing tour through Leipzig with two major trams. Special thanks go to the organizers. *Gunter Estel*

Category:  
**Info-Express**

Bar:  
Events - Schedule

Subtitle:  
**KS Railway Modelling Days in Stromberg**

For the 11<sup>th</sup> time KS-Modellbahnen is organising the exhibition in Stromberg in the Hunsrück on the 20<sup>th</sup> and 21<sup>st</sup> of September. In addition to various shown layouts in Gauge 0 (0e, 0f) the handling of flocking devices, the soldering of brass, landscaping and the weathering of wood will be demonstrated. Small manufacturers will make this performance perfect.

Opening Hours:  
**Saturday, 20<sup>th</sup> of September 10am – 6pm and Sunday, the 21<sup>st</sup> of September 10am – 4pm**  
Info: [www.ks-modelleisenbahnen.de](http://www.ks-modelleisenbahnen.de)

Subtitle:  
**Spur1-Freunde Berlin-Brandenburg**

On the occasion of their anniversary the “Spur-1-Freunde Berlin-Brandenburg e.V.” will again present many innovations on their large Gauge 1 club layout at the 10<sup>th</sup> Model Building Weekend on the 1<sup>st</sup> and 2<sup>nd</sup> of November in addition to other exhibitors and manufacturers. This includes the new computer control board, which transfers the entire switch of signals and switches to a central station inspector.

Opening Hours:  
**Saturday and Sunday 10am – 5pm**  
Info: [www.spur-1-freunde.de](http://www.spur-1-freunde.de)

Subtitle:  
**Expo-Trains 2008, Walferdange (Luxemburg)**

At the “Centre Prince Henri” in Walferdange the Expo-Trains will be held on the 8<sup>th</sup> and 9<sup>th</sup> of November. Various Gauge 0 layouts and dioramas will be exhibited. Several manufacturers and traders from Benelux and the neighbouring countries are expected.

Opening Hours:  
**Saturday 8<sup>th</sup> and Sunday 9<sup>th</sup> of November 10am – 6pm**  
Info: [www.amfl.net](http://www.amfl.net)

Subtitle:  
**Modellbau West, Rheinberg**

From 14<sup>th</sup> to 16<sup>th</sup> of November the “Modellbau West” will take place at the “Messe Nierrhein” in Rheinberg. Just like last year several Large Gauge layouts in Gauge 0, 1 and 2 will be shown as well as a Gauge 5 ’’live-steam train. Many traders will offer the opportunity of buying their products.

Opening Hours:

**Friday 14<sup>th</sup> – Sunday 16<sup>th</sup> of November 10am – 6pm**

Info: [www.bv-messen.de](http://www.bv-messen.de)

Subtitle:

**Large Gauge Meeting in Worms**

On 7<sup>th</sup> of December – get ready for the 2<sup>nd</sup> large Gauge Meeting of Gauge 0, 1 and II<sub>m</sub> with train operation at the halls of the power station in Worms on the Rhine River. Besides the ARGE Gauge 0 with their stand and part of a modular layout, many traders and manufacturers promised to come. Activity is provided with a large 8 x 4 metres industrial layout in Gauge II<sub>m</sub> with gasometer, cracker and gas-powered torch.

Event:

**Sunday 7<sup>th</sup> of December**

Info: [www.modellbahnboersen.de](http://www.modellbahnboersen.de)

### **Further Major Events:**

24<sup>th</sup> – 26<sup>th</sup> of October: Eurospoor, Uetrecht (NL)

Info: [www.eurospoor.nl](http://www.eurospoor.nl)

31<sup>st</sup> of October – 2<sup>nd</sup> of November: Modellbau Friedrichshafen

Info: [www.modellbau-bodensee-messe.de](http://www.modellbau-bodensee-messe.de)

6<sup>th</sup> – 9<sup>th</sup> of November: International Model Railway Exhibition in Cologne with the 5<sup>th</sup> Live-  
Steam Meeting

Info: [www.modellbahn-koeln.de](http://www.modellbahn-koeln.de)

21<sup>st</sup> – 23<sup>rd</sup> of November: Modellbau Bremen

Info: [www.modellbau-bremen.de](http://www.modellbau-bremen.de)

### **Additional Dates:**

10<sup>th</sup> Anniversary of the MECK **on 21<sup>st</sup> of September 2008** (10am – 5pm) – Gauge 1 and 1e  
vehicles from Epoch 3-5, venue: Auguststr. 28, 53229 Bonn-Beuel

Info: [www.meck-spur1.de](http://www.meck-spur1.de)

**26<sup>th</sup> – 28<sup>th</sup> of September 2008:** Sande, regional meeting on the occasion of ARGEs 20<sup>th</sup>  
anniversary

Info: Bernd Molnár, Email: [bernd@molnar.de](mailto:bernd@molnar.de)

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## Preview

Layouts:

On its way:

With a light railway in Gauge 2f

**Branch line romance in Gauge 0:**

The new Hagner layout – also with a glass case

Vehicles:

Finally:

The glass case remodelling in Gauge 1

Modelling:

**Well-known throughout the country:**

Models of advertising pillars

Test:

**Series 39:**

KM1 in comparison with KISS

... and further topics from the Large Gauge scenery...

For currency reasons some articles may be postponed

## Letter to the editor:

Referring to 012-Express No. 6 (2/2008), Modification of the BR 38:

Concerning the maintenance history of the 38 3389 I would like to add, that the renaming of the loco from 2786 Efd to BR 38 3389 took place in the year 1926 and its withdrawal from service indeed was announced for the 1<sup>st</sup> of March 1960, but on this date the loco belonged to the central station of the Bw Aachen and was given to the Bw Aachen West on the 1<sup>st</sup> of June 1963. On the 16<sup>th</sup> of July 1965 it was handed over to the Bw Düren, where it was put on ice on the 15<sup>th</sup> of July 1967 and finally was scrapped in the year 1968.

**Klaus Hoffmann, Wilhelmshaven**

Letters do not necessarily reflect the opinion of 012-Express. We may edit letters for clarity or length.