



1915, the French Army issues its orders



H012 Olot - Girona, an impressive Spanish layout



A rural tramway in the 1960s



Shunting in 1/35 scale on Mij Stuthout



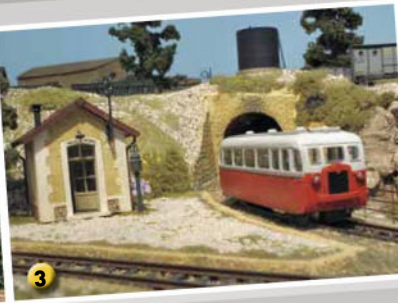
Free folder of drawings:  
Billard T 100D, Pinguely 0-6-0 T

## Creating a cliff materials and knacks in 0, H0 or N





Coming soon\* in  #81  
to be published April 2015



### Sn3 layout

- Degulbeef & Cradding, the final stage **1**

### History

- A seaside tramway

### Technique

- Blackening made easy

### H0 rolling stock

- A van for Abreschviller **2**

### 0 scale rolling stock

- Starting out in narrow gauge: a wagon

### Portfolio

- An artist and his trains **4**

### H012 layout

- A CFD layout in the corner of a study **3**

And the customary free folder of drawings

\* sous réserve de changement



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rolling stock, 014 layout,  
0,16.5 layout, scenery...

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# VOIE LIBRE

## Editorial #81

April, May,  
June 2015



### A healthy world!

I'm referring to our small railway modelling world, of course! The world of narrow gauge fans.

Far from the hectic pace of daily life, far from everyday worries, narrow gauge enthusiasts are incredibly dynamic. Simply take a look at manufacturers' new releases. This is a ritual we observe every year at Nuremberg. But it's also worthwhile studying the layouts on

display during international shows. Quality, quantity, diversity are all on the up-and-up when it comes to secondary and narrow gauge railways. True, there is still scope for improvement, and practicing our hobby still means we have to roll up our sleeves. But isn't that a large part of the fun? And Voie Libre is here to help us.

• FRANÇOIS FONTANA

Meet us on  and 

Keep in touch all the year round **VOIE LIBRE** on [blog.voielibre.com](http://blog.voielibre.com)

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### NEW

All the links to the internet pages mentioned in your magazine can be accessed on the Voie Libre blog by flashing the code or at the following address: <http://blog.voielibre.com/2015/04/liens-VL-81.html>



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## What's New?

H012

H012

### Atlas, the latest meter gauge model, a very fine Brissonneau & Lotz railcar

What a shame this is the last item in the collection! Unquestionably, it's the finest amongst the narrow gauge models released by Editions Atlas! The Anjou livery is very neatly applied, and the model can easily be motorized by those of us who enjoy scratch building.

FRANÇOIS FONTANA

ÉDITIONS ATLAS

Anjou type Brissonneau & Lotz railcar

12mm gauge track

Static model

Collection by subscription



### Four-wheeler carriages by Tillig

These very fine-looking carriages built from 1926 to 1930 (1929 for the composite) by the Wismar works for the Harz network (NWE) are supplied almost in their original condition, unlike the first carriages released by Tillig. They are marked as having been overhauled in 1974/1975 (which is

strange for Period III stock). They were rebuilt in 1984. Carriage 900 505 was destroyed in September 1980.

These carriages are easy to Gallicize: despite a rather generous loading gauge, they are very similar to the types found on various secondary rail-ways in France.

JACQUES ROYAN

TILLIG  
H012

Set of two carriages KB4i 900 481  
and 900 505 period III (ca. 70€)  
Composite KBD4i 902 304 period III  
(ca. 45€)



H0

### A suburban tramway by Liliput/Dolisch

Available in several versions, here is a pleasing set of suburban tramway stock. Built in 1927/1928 by Grazer Waggonfabrik, this stock ran on the Wiener-Lokalbahn. The route originated from the famous Opera Square in Vienna, ending at the spa town of Baden, 27km away.

The real trams were rebuilt several times. Of the various versions released by Liliput/Dolisch, the one reviewed here corresponds to period III, in cream and light blue livery. Running is very smooth, with a realistic speed. The motor unit and the trailer are fitted with an easily accessible NEM 651 interface. The lights and inside lighting use LEDs, and can be selected by switches located on the inside electronic boards. The "tramway" type end-couplers are fictitious, and the two vehicles are coupled by a realistic tow bar.

JACQUES ROYAN



LILIPUT/DOLISCH  
Reference L 133 891  
Ca. 350 €



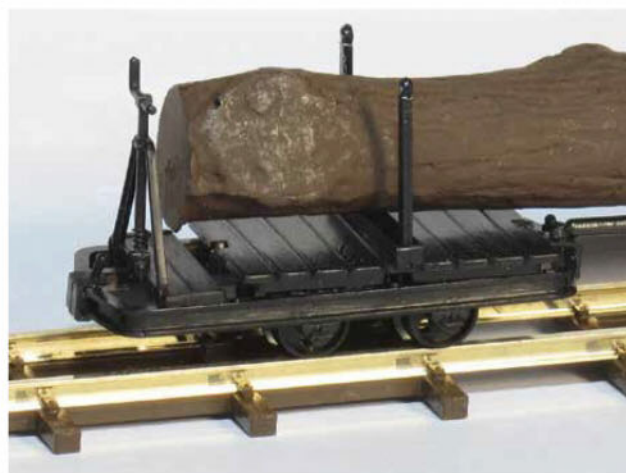
H06,5



## A log carrier by PMT

PMT, ex-Technomodel, has released a set of two log-carrying trucks with swiveling bolsters. The trucks are splendid and run freely; even more so as the log is made of painted cast metal... Fortunately, as this set is very light! Just what we need to re-create in H06.5 a scene from the mythical 1965 feature film "Les Grandes Gueules"!

JACQUES ROYAN



PMT

Reference 5-4276

Ca. 32 €

<http://www.pmt-modelle.de/>

H09  
009

## Sets of flat wagons from Peco

This time, Peco's attractive transparent boxes contain two pleasing short flat wagons. With or without bolsters, they are fitted with the brand's plastic axles and universal loop couplers. The running qualities are excellent, the decoration very neat. A touch of colour on the brake handle, some nice weathering, and they will be ready for service. The choice of loads is up to you!

FRANÇOIS FONTANA



PECO/GREAT LITTLE TRAINS

Set of two flat wagons

Dimensions: 41 x 23 mm. Wheelbase: 24 mm

GR-300 two flat wagons

GR-310 two bolster wagons

Price: ca £14 each



# Architecture & Passion releases a small engine shed



Christophe Constant, who is in charge of the artisan firm Architecture & Passion, has fallen for the narrow gauge stock produced by MinitrainS. He therefore decided to add to his thick catalogue of laser-cut card buildings two small engine sheds that can accommodate the narrow gauge locomotives made by the German company. The first is a double-track shed made of fiber cement panels. The second is a single track shed inspired by a building that used to exist in eastern France. Both belong to the Easydéco range. In addition to being very neatly cut, they are made of different colour card, meaning that modellers don't need to decorate them. The stacking of the various card

thicknesses provides both relief and colour to the building. Vinylic adhesive, Cléocol for example, is perfectly suited to this type of kit, but needs to be applied sparingly. The card can very easily get stained, so keep a damp Q-tip handy to clean up any overflow. Even though the basic colours are fully satisfactory, light weathering with pastels or even colour crayons can only improve even further the appearance of these buildings. We'll take a closer look at them in the future.

Note also that Architecture & Passion now distributes the MinitrainS rolling stock. A welcome combination of ranges.

ÉRIC FRESNÉ

SINGLE-TRACK NARROW GAUGE  
ENGINE SHED

Ref. 87H0e18: 29.00 €

DOUBLE-TRACK NARROW GAUGE  
ENGINE SHED

Ref. 87H0e19: 29.00 €

Postage: 5.00 € (ordinary mail)

ARCHITECTURE & PASSION

144, rue des Furets

40210 Labouheyre

<http://www.architecture-passion.fr/>



Each Easydéco kit consists of a series of card sheets of different colours.

## Tooling

### Cléocol available on LR Modélisme !

We regularly recommend this adhesive whose qualities cannot be over-emphasized. Until now, its only fault was that it was sometime hard to find in shops. You'll no longer have any reason to do without it: it's now available from the LR Modélisme online store. Originally designed to glue paper and card, we have successfully experimented using it also for gluing ballast and flock. A must-have product for your workshops!

ÉRIC FRESNÉ



CLÉOCOL

Available on <http://www.lrmodelisme.com>

100g. bottle.

Ref. CLEOCO100: 3.20 €

250g. jar.

Ref. CLEOCO250 5.30 €



By stacking the various sheets, the model can immediately be installed on the layout.



H0/00  
scenery

## Juweela: realistic materials

This German company has come up with the bright idea of producing, in the usual modelling scales, materials that are usually loaded or stored in bulk. Alongside splendid ceramic bricks dyed in the mass, Juweela has released paving stones, peat, and coal in bulk, balls or briquette form. Each box is designed to fill a standard gauge open wagon. In other words, whole trainloads of skips in H0 or 00. We shall return to the vast subject of loads in a future issue of *Voie Libre*.

ÉRIC FRESNÉ



**JUWEELA**  
H0 scale bulk materials  
10 references available (bricks, coal, peat, paving stones...)  
Available on <http://www.lrmodelisme.com>  
Price observed in early March: 6.50 € per pack

Tooling



## La Colle 21

Since they appeared on the market, cyanoacrylate adhesives have gained a strong reputation for being the miracle glue. Actually, in the modelling field, they are far from perfect. The product tends to dry out, or rather to polymerize when in contact with dioxygen inside the tube, once the latter is open. Furthermore, ordinary "cynao" adhesives leave a white halo around the area to which they are applied. Belonging to the generation of anaerobic cyanoacrylates, Colle 21 doesn't have these drawbacks and is perfectly suited to mixed assemblies combining resin, metal and plastic. Builders of static kits have understood this and use this brand extensively.

ÉRIC FRESNÉ

COLLE 21  
<https://fr-fr.facebook.com/colle21>  
Available in shows  
Price: ca. 7 €

H0/00  
scenery

## Take on water with Régions & Compagnies

Or rather, supply water to your H0 scale locomotives! Régions & Compagnies has released a very typically Breton water tower, in laser-cut printed card. The rectangular body is supported by two square-section brick pillars. The kit consists of a series of 2mm thick grey card parts and of a few fine card facings. While the kit can be assembled with standard adhesive from a tube, we would recommend using vinylic glue applied with a brush. The printed patterns mean that modellers will not need to decorate the kit.

FRANÇOIS FONTANA



**RÉGIONS & COMPAGNIES**  
Cie des Côtes du Nord water tower  
Ref. DEP 204

Available from <http://www.lrmodelisme.com>  
Price observed 19 €







# NUREMBERG 2015

## Narrows gauge makes a come-back!

**The International Toy Fair of Nuremberg is no longer the must-attend event it used to be just 10 years ago. Times-are-a changin', the way information is distributed also. But Nuremberg does remain a good barometer for our hobby.**

Fellow H0 narrow gauge fans, you who had been on a strict diet for many years where new releases were concerned, indigestion is now round the corner! Following the lightning start of the MinitrainS firm with its 009/H09 range two years ago, industrial manufacturers in this sector are showing signs of life. Three locomotives and five wagons are announced by MinitrainS before the summer of 2015. Peco is following in the German brand's footsteps: four wagons and two carriages in 009 have been released in less than two years. The locomotive, also in 009, produced in partnership with Heljan, is expected this summer. Bachmann Branchlines is preparing a War Department 4-6-0 T in 009. Liliput is in the process of manufacturing the motor trolley and its trucks. The picture would not be complete without the three fine new releases from PMT in H09, the creation by Bemo of an electric locomotive in H012 and by Tillig of a Harz railway 2-10-2 T. Cherry on collectors' cakes, the new Egger-Bahn company has

released a second series of locotractor N° 4, the model with the wooden body at the front. Made out of cast brass, with ultra-fine parts and an outstanding driving mechanism, this little gem is priced at a hefty 960 euros that puts it beyond the reach of many enthusiasts.

### Taking a look at large scales

Om scale Bemo style is proving successful: the small shunter is now available, and a new wood-carrying wagon complements the range. A BoBo electric locomotive of Ge4/4 type is announced for 2017. American O scale fans are not so well served, as the Bachmann Spectrum programme only features two tank wagons and a new issue of the 2-6-0 tender locomotive.

The world of large scale isn't very active either: a new 0-4-0 T from LGB and a Swiss electric motor unit from Pullman. The price at which the latter is selling makes it an item for modellers with deep pockets.

TEXT AND ILLUSTRATIONS: FRANÇOIS FONTANA



MinitrainS is preparing a bogie tank wagon to accompany its DFB 0-8-0.

MinitrainS again, this time the Porter 0-6-0 T. It should be available by this summer.



With the 0-6-0 chassis ready, the War Department 2-6-2 T should be along in the near future!



The small Liliput Orenstein & Koppel diesel is available in new liveries. This is a superb model with running qualities that are above reproach!



A 2-10-2 T locomotive for the Hartz railway is the logical follow-on for Tillig's H012 range.



Liliput had announced them last year: the prototypes of the motor trolley and of its truck were visible at Nuremberg. The final model should be available soon.

MinitrainS for ever! Choose your Forney 0-4-4 T: wood and black or all black. A model available this summer!







Peco has released an avalanche of new rolling stock items! Here are the promising prototypes of the small four-wheeler carriages.



Absolutely cute! A fine item for collectors. The latest release in the Egger-Bahn range is powered by the universal driving mechanism, which performs astoundingly.



Bemo's first locomotive in 0m scale is now available. The German brand announces a large BoBo type engine for the near future.



The Bemo bogie wagon complements the 0m goods roster.



For Bemo, the year will be placed under the double sign of the Bernina and Rhaetia railways.



Pullman is a brand of the Esu group, which produces equipment in 1/22.5 scale. The Swiss motor unit ABe 4/4 II is sold 1395 euros. A ballast wagon is announced for this year.



Bachmann Spectrum has restricted its new releases in 0n30 to two tank wagons! Might the enthusiasm for 0n30 be waning?



HO  
scenery

## Architecture & Passion: Saint-Brice-Courcelles halt

The *Chemin de fer de la Banlieue de Reims* was a 400+ km meter gauge secondary network, born in the late XIXth century and which served the Marne and neighbouring départements (Aisne and Ardennes).

The halt of Saint-Brice-Courcelles was located at Km point 4 of the Reims – Cormicy line. Destroyed during WWI, it was rebuilt shortly afterwards. Standing on a stretch that was converted to standard gauge in the early 1950s, it now watches heavy trains of sheet metal rolls trundle past on their way to an industrial area.

The kit consists of three sheets of card and of one sheet of transparent plastic. The parts are assembled using wood glue applied with a brush, any surplus being lifted off with tissue. Glue the base of the roof to the walls, and then assemble the zinc roof. The framework angle parts are

small, but easy to fix thanks to the tongues and grooves foreseen for this purpose.

The model illustrated here is decorated with Humbrol paints: 121 beige, 28 light grey, 155 brown.

CHRISTOPHE SACLET



SAINT-BRICE-COURCELLES HALT

Ref. 87CBR21: 29.00 €

Postage: 5.00 € (ordinary mail)

ARCHITECTURE & PASSION

144, rue des Furets

40210 Labouheyre

<http://www.architecture-passion.fr/>

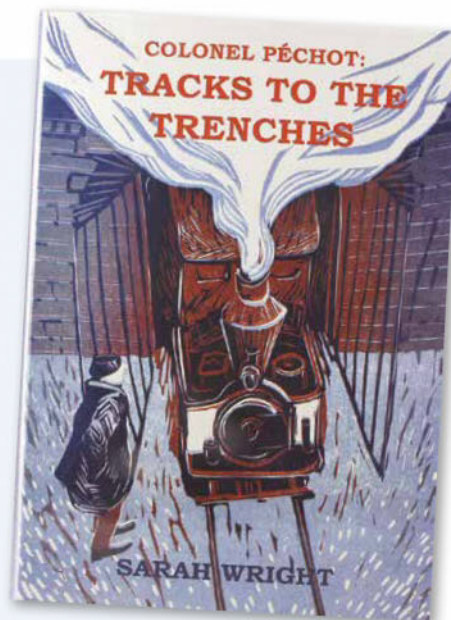
Book

## Colonel Péchot : Track to the Trenches

Even though his 60cm gauge military railway system is well known, who is actually that familiar with Prosper Péchot and his theories? Very few people actually, and what has been written these last 20 years has barely scratched the surface of the subject. Sarah Wright has written a seminal work. Her research work brings to life a man of his time: a touchy officer, a fervent Catholic, close to his family, but probably also part of the anti-Dreyfus

camp. He is also a man deeply affected by the defeat of 1870, and whose projects have but one aim: to prepare France for the next war with Germany, often despite the opposition of his commanding officers, who didn't always understand the potential of his system for field operations, and who decided to restrict it to the Eastern fortresses. He was probably unsuccessful in "selling" his system. History proved his views to be tragically correct.

ÉRIC FRESNÉ



COLONEL PÉCHOT :  
TRACK TO THE TRENCHES

Author: Sarah Wright

Published by Birse Press

256 pages in English

300 illustrations

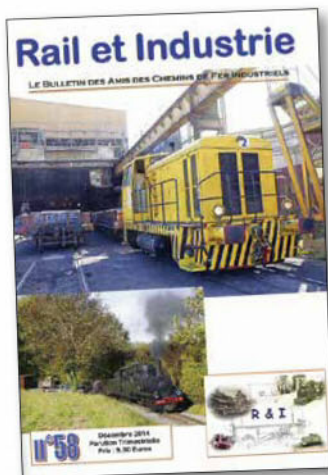
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Available on <http://www.lrmodelisme.com>

Ref. PECHOT. Price: 44.90 €



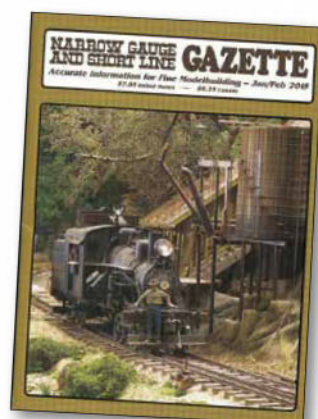
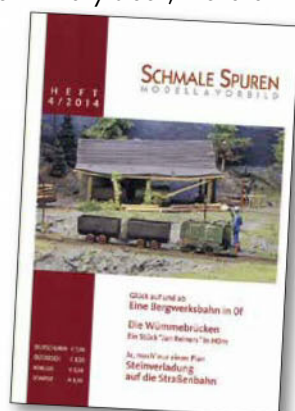
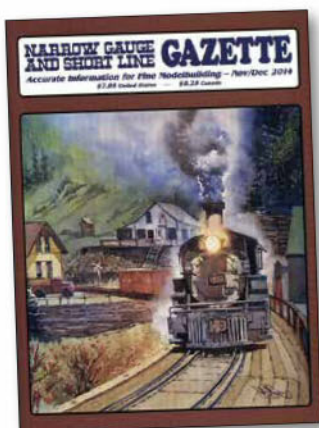
# PRESS REVIEW



The press review is the most unpredictable section of Voie Libre. It depends entirely on what publications we have received at the time of writing, of what we discover in them and of what appeals to us... And it's easy to fall for the dossier dedicated by **Rail & Industrie** to the German KDL wartime locomotives, widespread on the SNCF or on industrial railways after 1945. It's fairly easy also to fall for the evocation of the Chemins de fer du Calvados to be found in **Schmale Spuren**. The various items made by Lucien Lacour are absolute gems

in terms of detailing. On the subject of military stock, Richard Dunn in **Narrow Gauge and Short Line Gazette** takes another look at the 60cm gauge wagons built for the Pershing expeditionary force in 1917. New documents have come to light since he wrote his book, and he finally offers an accurate drawing of the bogie open wagon. What was less clear was the article found in the following issue of the **Gazette**. To understand the regulation game

base on poker tokens, we had to read the text several times. But it would be worthwhile adapting it to a French layout. And while you are reading the **Gazette**, turn the page to admire Don Ralton's abandoned depot, which won the magazine's contest at the last Narrow Gauge Convention. A well-deserved award. Enjoy your reading!



• THE EDITORIAL TEAM

## Gathering Train Passion at Ardèche Miniatures

On Saturday 30th and Sunday 31st May, from 10h to 18h, 45mm gauge enthusiasts can get together for the traditional springtime gathering at Ardèche Miniatures.

Come to discover, exchange and, subject to technical compatibility, run your 45mm gauge trains.



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JARDIN DES TRAINS ARDÉCHOIS  
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Phone + 33 (0)4 75 60 96 58 07, e-mail : [min@free.fr](mailto:min@free.fr)

## Gathering Discover the Trégor "Potato Train" at Plouider

This H0m layout will be on display on 4th and 5th July at the Plouider exhibition in the Finistère département. The modelling association *Amicale des Maquettistes de la Côte des Légendes* organizes its annual exhibition, and trains are always well represented.

Rens. : [www.amcl-29.org](http://www.amcl-29.org)



## Information New postal address for the GEMME

The GEMME (*Groupe d'Etude du Modélisme à voie métrique et étroite*) has a new postal address. The association can now be contacted at:

GEMME  
11, avenue Buffon  
77270 Villeparisis (FRANCE)  
<http://www.gemme.org/nous-contacter/>





H012 layout



# A single ticket to Olot

Remember, Jean-Louis Rochaix reviewed the Spanish meter gauge line from Olot to Girona in Issue 56 of *Voie Libre*. Late last year, we discovered the H012 scale layout created by the Friends of the Olot – Girona Railway Association (ASAMTOG in the Spanish acronym). All aboard!

Last November, four modellers travelled all the way from Catalonia to Pontoise and the exhibition halls of RailExpo 2014. They didn't come alone, but brought the modules of their layout, which will integrate a historic interpretation Centre based upon the railway. This centre will be housed in Olot station, specially refurbished for this purpose.

Text: **FRANÇOIS FONTANA**

Photographs: **FRANÇOIS FOUGER**

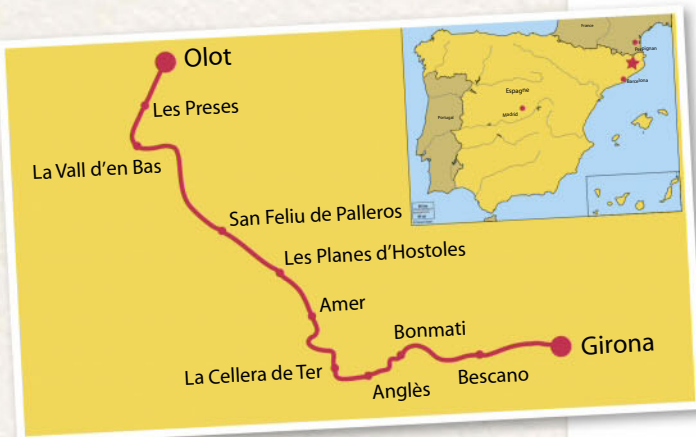
An Euskalduna Ferrostal B2D type railcar, a brass model built by José Felix Arroyo, calls at Sant Esteve station.

## The layout at a glance

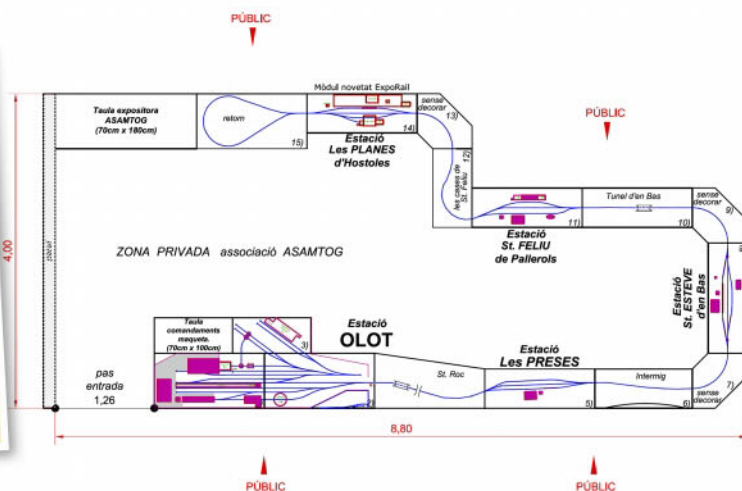
- Scale: H0
- Gauge: 12mm
- Control: Roco digital
- Inspiration: Olot –Girona line, Spain
- Period: 1960s







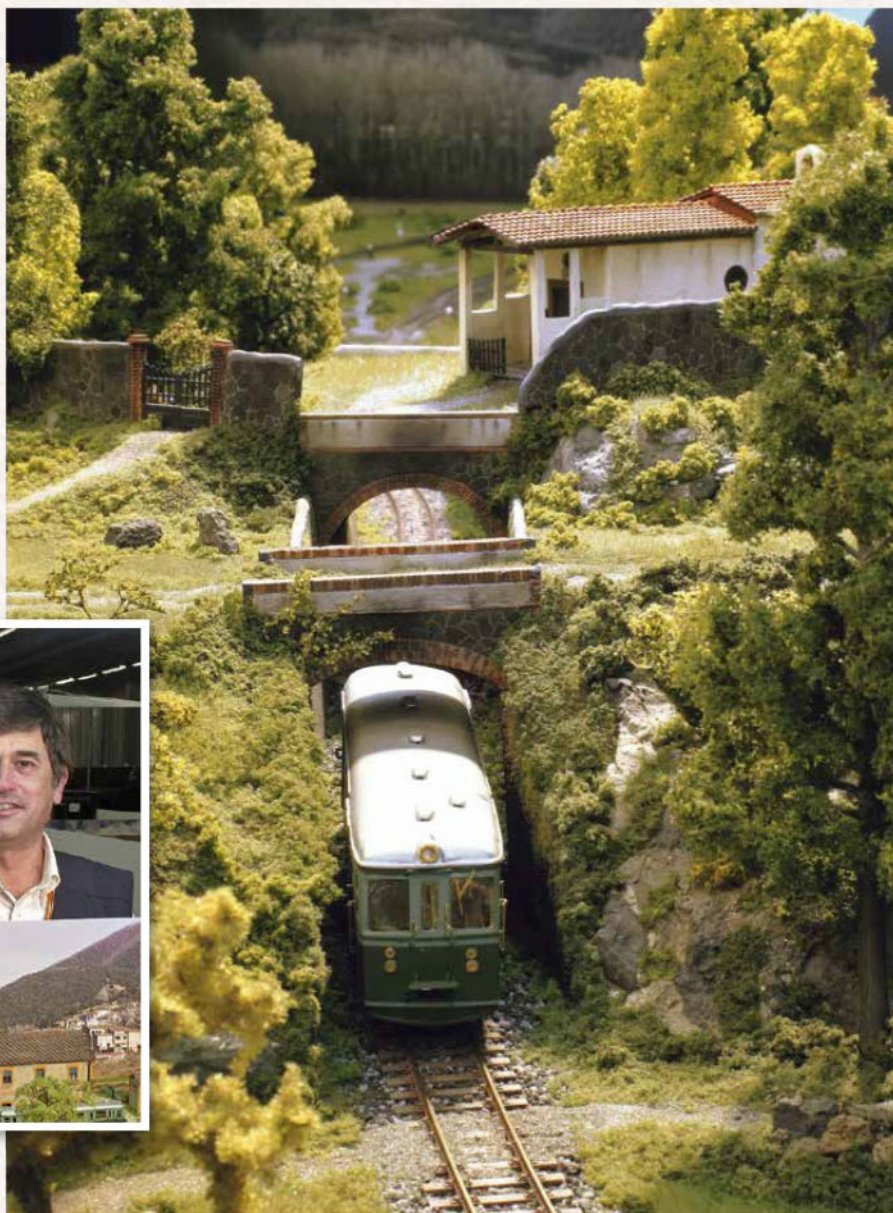
Plan of the line. Graphics by Eric Fresné



Plan of the ASAMTOG layout.

## Preparing our journey

For the time being, the layout consists of 15 modular elements. It reproduces part of the line, from the terminus at Olot to a balloon loop. The line travels through the stations of Les Preses, Sant Esteve d'en Bas, Sant Feliu de Palleros and Les Planes d'Hostoles. The real line, 54km long, originated from Girona (altitude 75m) and reached Olot at 440m, after having crossed En Bas pass at 558m. The four modellers haven't yet reproduced the steeply graded sections. The parts we discover here are generally level. ●●●



Alfons Solà, Antoni Serra, Jordi Campderrich and Ignasi Riera at Railexpo 2014.

The line winds through the countryside near the village of Sant Roc. The distinctive sites are carefully modelled by the team, who stay as close as possible to prototypical reality.



The backscene photographs were taken in the real geographic locations. Here we see Les Preses station.



The buildings were carefully reproduced by the club members. The small Prairie engine was completely scratchbuilt by Alfons Solà. The wagons are Parkside Dundas kits, slightly modified.



A goods train seen in Les Planes station. The wagons have a very British appearance, which is normal as the prototypes were built by Darnall Railway Carriage works.

A traditional giant from the annual Olot fair.



## Our travelling companions

The Friends of the Olot-Girona Railway Association brings together some 30 enthusiasts. Their objective is to open the Historical Interpretation Centre in Olot station. A Spanish 2-6-2 T type steam locomotive will be on display there, as well as two passenger carriages preserved by the association. The collection also features a great many objects and documents, as well as testimonials that the members are in the process of gathering. A privately owned Saint-Léonard 2-6-0 T loco-

tive, as well as the 2-6-2 T preserved on the Blonay-Chamby tourist railway in Switzerland, might join the rolling stock items already planned for display and, who knows, lead to creating a steam-hauled tourist operation.

Five of the association's members are experienced modellers, and it is this group which launched the project of a model reproducing the line as accurately as possible.

## All aboard!

The layout consists of soft- and plywood modules measuring 140 x 50cm. ●●●





The advent of railcars was a revolution for the line: travel time was cut from 3h09 to 1h30!





The local atmosphere is carefully modelled. The scenery was created based on testimonials and archive material.

The period chosen means Spanish-built 2-6-2 T steam locomotives can cohabit with diesel railcars.



●●● Width is increased to 70cm in the stations. Each site is carefully reproduced and features a photographic backscene of the prototype location. The team opted to evoke the 1960s. Railcars, which ran continuously from 1959 to 1969, when the railway closed, operate alongside steam locomotives. The track and turnouts are from the Peco range. The turnouts are operated via

motors located under the baseboard. Power is supplied by a Roco digital central unit.

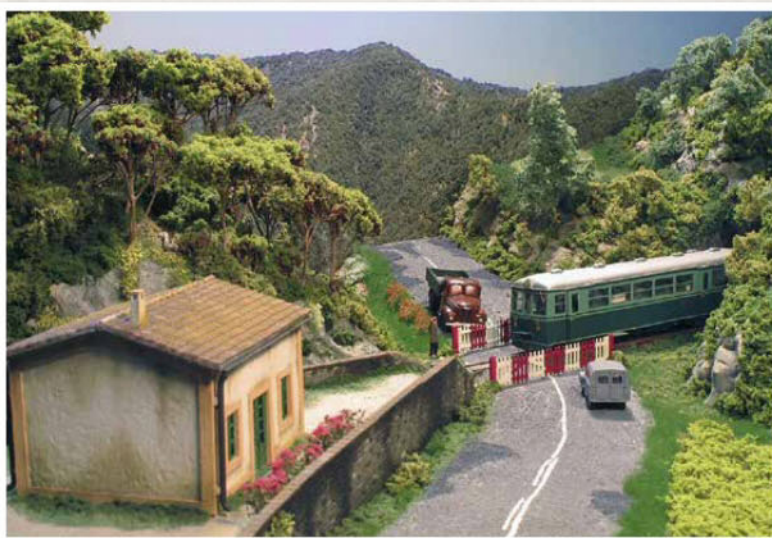
The scenery is built in the customary way on flocked shells. The main trees are from the Miniatuur range, those located in the background are from industrial ranges.

All the structures are built out of plastic, wood and card, and are scale models

of the prototypes, in the proper locations. Once the modules are completed, they are weathered with pastels.

The layout, displayed for the first time outside Spain at RailExpo, had been shown previously at Olot. The inhabitants of the area recognized their dwellings and the local scenery! Could anything be more satisfying for our modelling team? ■





The railcar and the road vehicles are indicative of the period modelled: the 1960s, shortly before closure of the railway.

A night-time atmosphere that can be discovered at the Historical Interpretation Centre that will open in 2016.

Upon arriving in Olot station, the trackplan is truly impressive!







Texte and photos :

**FRANÇOIS FONTANA**

Java, the sugar cane campaign is in full swing. A tender locomotive, a Roco HF110 0-60 model, heavily modified, is hauling a string of cane-laden skips through rice fields to the mill. We will return to this H09 creation of Diger Rossel, measuring 200 x 50cm.

# OntraXS, better and better

**OntraXS 2015 has closed its doors. This event, which lasted three days, attracted some 10,000 visitors who were not put off by the sunshine! All were impressed by the 37 layouts on display; and for good reason!**

**O**ntraXS is a railway modeling exhibition. Organized by a small group of enthusiasts, it takes place within the large Railway Museum, installed in a station in Utrecht, Netherlands. The layouts are displayed amongst the preserved rolling stock and the collections of railwayana. An outstanding location! To meet the standards of the place, the organizers

have set drastic criteria: the layouts must be of a quality above reproach, and their presentation must be impeccable. A lighting pelmet and proper signage are essential so that visitors notice the layouts. To the extent possible, the layouts must be shown for the first time, or almost. Visitors award two prizes: the children's award and the public's award.



At the very beginning of the OntraXS adventure, 40 % of visitors came to admire the layouts, and the remaining 60 % discovered railway modelling as they explored the aisles. The proportion is now the opposite: nowadays, the show attracts ever more enthusiasts.

### Plenty of narrow gauge!

Pure chance, say the organizers. But chance serves us well! This year, three quarters of the layouts displayed were narrow gauge. The fact is, narrow gauge often means ingenious solutions, high-quality modelling and original themes. The exhibitors come from all over Europe. This year, seven ●●●



The town square accommodates a loop, a platform road and a siding. Behind the small tram engine, the only model not built by Ton (a Shapeway production) is the ticket kiosk. We shall review this layout!

Marleen crosses the lifting bridge over a canal branch which forms the small city harbour. This outstanding model by Ton Janssen, in Zero meter gauge, is a fiction based on the accurate surveying of many real buildings. Everything is scratchbuilt out of plastic sheet, card or plaster!







Terhagen halt. Everything has been designed and built by the team members, using ordinary materials. Brass for the overhead wire poles, milled plastic for the rolling stock, Forex, foam core and engraved parts for the buildings. Real artwork!

●●● nations were represented: railway modelling is a dynamic hobby, there's no doubt about it.

Even though the selection of layouts displayed isn't always so heavily slanted towards narrow gauge, OntraXS is worth a visit, as some visitors who had come all the way from the Basque country confirmed with their local accent!■



They are fans of vicinal tramways, of Zero meter gauge and have got together to informally create and exhibit. The result is impressive! A petrol-driven motor unit calls at Rumst station.



The layout covers a square area of 3.60m and features three distinct scenes. Here, we are in the brickworks area, served by its own narrow gauge system. Another layout we must return to!







Croismare, the "Péchat" station, 10 January 1916 (BDIC - International Contemporary Documentation Library - collection)

# Péchat

## moves up to the front

**In 1915, humanity was busy inventing industrial warfare. Everything had to be imagined, particularly the necessary bulk transport systems. 60cm gauge track played its part to the full...**

Text: **ÉRIC FRESNÉ**

**A**s early as the end of 1914, Allied and German troops dug down on the French front. The trenches built ended up looking like two gigantic fortresses, ever more elaborate and better armed...

On the French side, the industrial infrastructure was pressed into trench war service. From Belfort to Dunkirk, the 75 artillery guns had to fire six rounds per minute in all circumstances. But all this ammunition also had to be routed to the front lines. Railways, roads and ●●●





While locomotives were being built in the United States, the French army ordered a large quantity of 1888 type platforms from Canada. Hence this unusual combination of a Davenport 0-4-0 saddle tank with a Péchot wagon on the sidings of the National Steel Car company in Hamilton, Ontario. <<https://www.flickr.com/photos/colinchurcher/Library and Archives Canada PA208472>>

●●● waterways were put to good use. However, despite their efficiency, these means of transport still could not reach all the way to the front line proper. The last few miles to be covered were under enemy artillery fire, churned up by troops and convoys: the land became impassable.

### Péchot paves the way

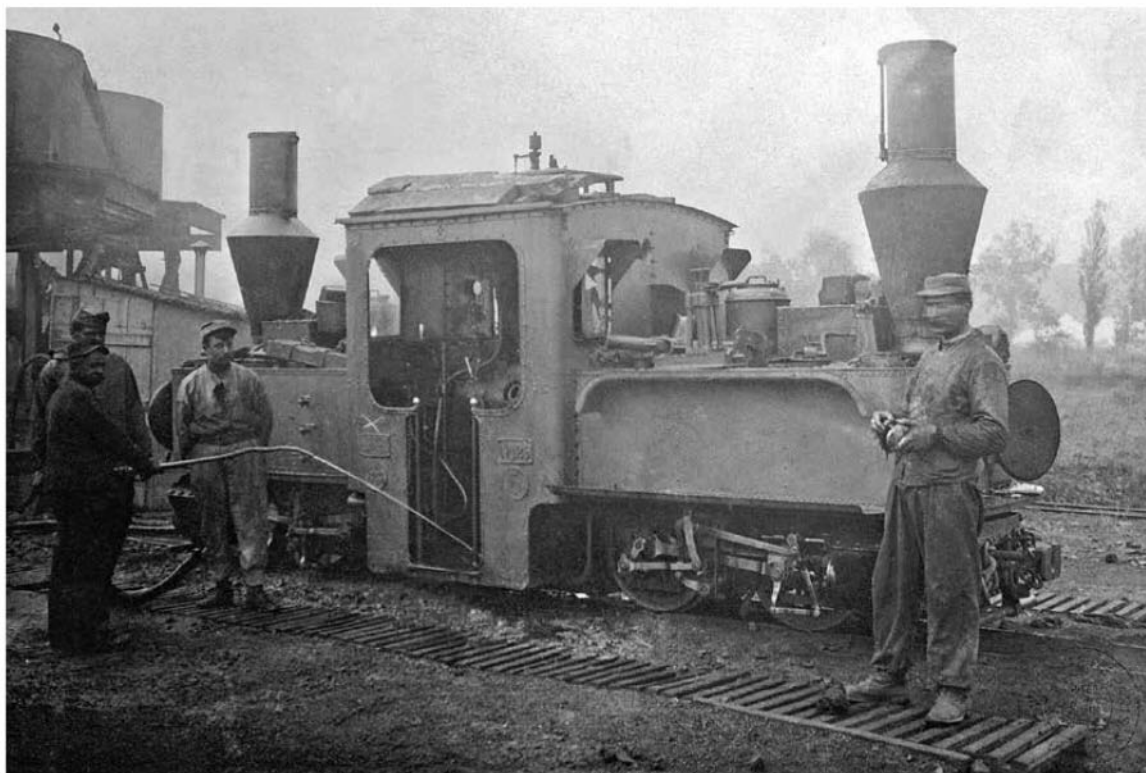
The military doctrine applied in France after 1870 was based on "massive attack" using large infantry movements. The units, concentrated at the border, had to be able to overrun the enemy lines in one assault. And contrary to the German General Staff which used 60cm gauge railways as support to marching troops, there was no place for this rail system in the plans developed by the French generals. However, Prosper

Péchot had perceived at a very early stage how useful his system could be in the framework of an offensive. As soon as 1882, he designed it as the means to "*bring to the designated point at the designated time, beyond the area served by mainline railway networks, the equipment and supplies required by the siege and field armies to fight and to live*". Military manoeuvres at Meaux and Langres soon demonstrated the soundness of his views. Nevertheless, the Ministry of War restricted the Péchot system to serving the Eastern fortresses.

However, the supply problems encountered right from the beginning of the war soon brought 60cm gauge railways out of the forts. Péchot, retired, was called back to active duty and put in charge of training field railway staff.

During the Champagne offensive, in the autumn of 1915, 60cm gauge track came under fire for the first time. But its efficiency depended on having enough stock available. With 60 locomotives and barely 700 four-wheeler bogies, this was far from being the case. Worse still, the Fives and Cail factories that had built most of the engines were by then in German hands. The Directorate of Forges had to quickly find solutions and turned its sights abroad to find factories capable of supplying the necessary equipment. Thanks to its enormous production capacity, Baldwin was able to build 280 Péchot-Bourdon locomotives and to get them across the Atlantic in record time! 1888 type trucks and platforms were built in Canada and the U.S.A. The U.K. supplied the track and a few locomotives.





## Péchot-Bourdon 0-4-0 + 0-4-0 T

BUILDER.....  
..... Baldwin Locomotive  
Works, Philadelphia,  
U.S.A.(round plate)  
TOTAL WHEELBASE.....3.80 m  
WEIGHT  
IN WORKING ORDER..... 14 t  
MAXIMUM LOAD  
ON THE LEVEL.....340 t  
(BDIC collection)

Perfectly aligned tracks,  
neatly arranged briquettes  
on the locomotives and  
curtained platforms that  
look almost like toast-  
rack carriages... The  
Péchot fortress railways  
were a little reminiscent  
of seaside systems.

## With a little bit of help from the Engineers

While the power and efficiency of the Péchot equipment were not questioned, it was a little on the heavy side and not fully adapted to trench warfare. Wishing to compensate as quickly as possible the shortage of reliable equipment, the Directorate of Forges decided to diversify the types made available to the Artillery. The purpose wasn't to produce immediately new types of steam locomotives. And Decauville produced engines that could perfectly be used in wartime.

The Engineers Corps had previous experience of this, a few years before WWI. In 1912, during the conquest of Morocco, the 5th Engineers Regiment was put in charge of building an extensive network of 60cm gauge railways to supply the troops. Besides ●●●



And likewise for the track. Faithful to the end to the Péchot system, the Artillery ordered thousands of kilometers of portable track, supplied in standard lengths and radiuses. La Maltournée depot, July 1917. (BDIC collection)





#### Type 17 0-6-0 T

BUILDER.....Decauville  
TOTAL WHEELBASE.....1.40m  
(Photo G. Mangin/D. Oberlin collection)

WEIGHT IN WORKING ORDER.....10.5 t  
MAXIMUM LOAD ON THE LEVEL.....169 t

●●● some Péchot equipment taken from the arsenals, most of the stock was bought new in France and in the U.S.A. Decauville took the lion's share. Among the new models it produced from 1911, the type 17 0-6-0 T engine appealed to the Engineers, who ordered 67 units. Right from August 1914, the Corbeil factory began producing engines of this type for the Artillery. 160 units were built, the last one coming off the production line in December 1917. In parallel, an order was placed with Kerr, Stuart & Co for a clone of type 17. This was known as the Joffre type, of which 60 units were built on Decauville drawings, but with a typically British appearance.

#### Pulling out all the stops

Again because of the emergency situation at the beginning of the war, while waiting for the delivery of the new Péchot-Bourdon locomotives and to compensate for the relatively slow deliveries from Decauville (Corbeil could supply only six type 17 engines every month), the Artillery boldly ordered what could be perceived as "weird" for French ●●●



#### Joffre type 0-6-0 T

BUILDER.....Kerr, Stuart & Company,  
Stoke, U.K.  
TOTAL WHEELBASE.....1.40m  
(BDIC collection)

WEIGHT IN WORKING ORDER.....10.585 t  
MAXIMUM LOAD ON THE LEVEL.....169 t





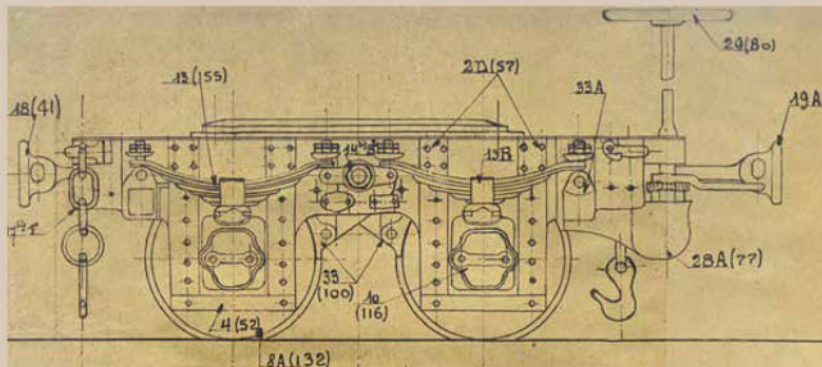
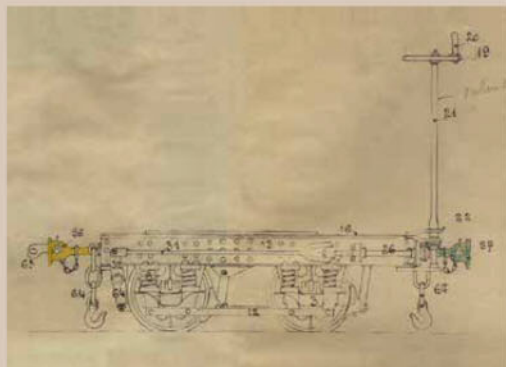
[Collection BDIC]

## The rolling stock joins the fray

Like the 60 Péchot-Bourdon locomotives, there was no way the rolling stock available in the arsenals in 1914 could possibly meet the colossal needs of the front. As was the case for the engines, the production capacity of the French factories was totally insufficient, due to the degree of sophistication of an 1888 type platform and of the quantities of equipment needed to supply the front. All this quickly led the Artillery to study a new type of wagon. Naturally, it had to be perfectly compatible with the Péchot system: able to handle the curves and turnouts, but also the turntables. The Artillery wished to preserve the principle of the carrying truck. The new model still had to be designed, a kind of "marriage" between the Engineers Corps and the Artillery...

From 1912, the French Protectorate in Morocco had had an extensive 60cm gauge railway system built by the Engineers Corps. Most of the rolling stock

supplied by Decauville consisted in a large series of bogie flat wagons with drop-sides. With some minor modifications (an increase in the spacing of the bogies, replaced by trucks), this body was adopted by the Artillery and production began at Corbeil. The new truck was designed immediately afterwards. Technically, it differed completely from the 1888 model. The chassis consisted of U-shaped girders held together by cross-beams, like the standard wagons, whose axleboxes, each sprung on two non-compensated coil springs, were also used. The 1888 model was entirely made of riveted sheet metal and had a suspension system featuring compensated leaf springs. Decauville produced 6500 trucks and 3000 platforms. Simple to use and to maintain, they worked wonders on the front. Nevertheless, in 1920 the Engineers opted for the 1888 model and the newer type was sold off on the civilian market.







#### Side-rod-and-jackshaft six-wheeler locotractor

BUILDER ..... Schneider  
 TOTAL WHEELBASE ..... 1.42 m  
 WEIGHT IN WORKING ORDER ..... 10 t  
 (Photo G. Mangin/D. Oberlin collection)

●●● narrow gauge... 32 locomotives of 0-6-0 T type and with a typically American appearance were procured from Baldwin, straight off the catalogue. The enormous funnel with its spark arrestor, the saddle tank and the closed cab with square windows were all obvious features from "across the pond". The first 20 engines were delivered in November 1914 and the following 12 made up a complementary order that arrived in April 1916. They were numbered B 1 to B 32 with a B like Baldwin or maybe like "bois" (wood), used to fire them. This feature led these engines to be mostly assigned to lines in the Vosges mountains. On the other hand, with an axle-load of more than 4 tons, they turned out to be rather aggressive for the standard Péchot track...

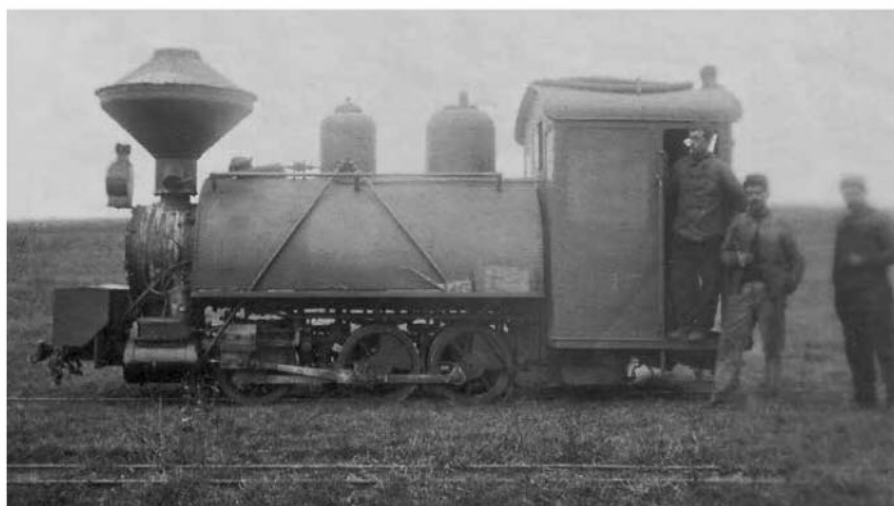
### Cease-fire

Steam haulage was fairly successful in running the gauntlet of trench warfare. With one small exception, however: smoke. Imagine being the driver of a Péchot-Bourdon, stopped somewhere

along the line in steam, with two fine plumes of smoke rising on either side of your cab, and within range of a German 77 battery... Not forgetting sparks at night time! Aside from the very mildly burlesque side of the situation, steam locomotives were sorely lacking in discretion near the front lines, and the trains made perfect targets. Wagons could be hauled using animal or human

power, but a discreet mode of mechanical haulage was clearly lacking.

The improvements made to internal combustion engines had already led the Artillery, before the war, to consider introducing a petrol-driven tractor to complement the Péchot-Bourdon locomotives. A first order was issued in February 1914. But Leroux, the builder based in Valenciennes, was unable to



#### 0-6-0 saddle tank

BUILDER ..... Baldwin Locomotive Works,  
 Philadelphia, U.S.A.  
 TOTAL WHEELBASE ..... 1.717 m  
 (Photo G. Mangin/Coll. D. Oberlin)

WEIGHT IN WORKING ORDER ..... 13.154 t  
 MAXIMUM LOAD ON THE LEVEL ..... 520 t



supply the first units, assuming they had been completed by the time the city was invaded by the German army in August ... However, this first study was not lost. It was used to order a small series of locotracors from Drewry-Baguley in the U.K. They were not very successful. On the other hand, later projects fared much better. These were pure products of the large armament factories located in central France: Schneider and Saint-Chamond. The Schneider 1916 model was a side-rod-and-jack-

shaft locotractor featuring a heavy cast pig-iron chassis. It was loosely based on the design of the Leroux tractor. The Saint-Chamond engine was technically far more innovative. It was a petrol-electric tractor based on the Henry Crochat patents. These locotracors appeared at a later date, from 1916, shortly before a large series of tractors supplied by Baldwin. They were very successful with the artillery troops, so much so that after the war, they were kept by the army together with the 1888 stock. ■

## The Valois archive

These are the pictures taken by the Photographic section of the French Army from 1915 onwards. This archive brings together more than 200,000 photographs, which the Bibliothèque de Documentation Internationale



Contemporaine (BDIC) is gradually making available online via its digital library <<http://argonnaute.u-paris10.fr/>>.



### BoBo petrol-electric locotractor

BUILDERS.....Crochat/Saint-Chamond

TOTAL WHEELBASE.....4.50 m

WEIGHT IN WORKING ORDER.....14.5 t

(Photo G. Mangin/D. Oberlin collection)

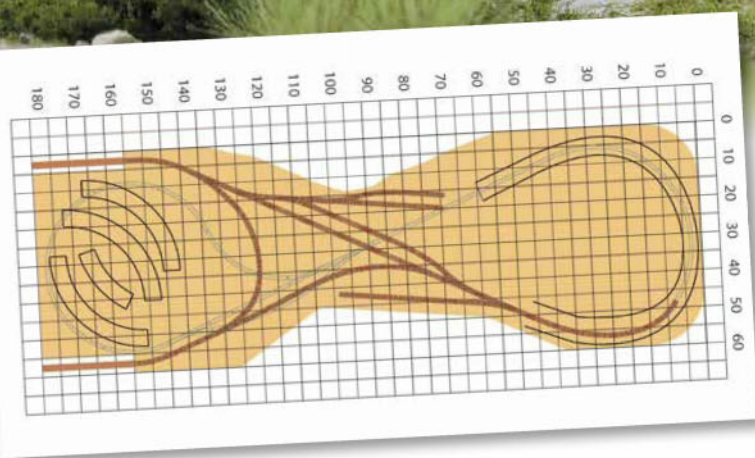
Everywhere on the front, toiling incessantly, the artillery troops succeeded in laying track impeccably and tidily storing the briquettes on the engines ...  
(Photo G. Mangin/D. Oberlin collection)







Spot on! It's level!



I design my layout with the Raily 4 software. It enables me to draw the outline of the trackbed, the trackplan and to "apply" over it a grid in 5cm scale steps. By exporting this basis into a vector graphics package, I can add my cutting lines.

# A solidly built layout

**First and essential stages in the construction of a layout, the benchwork and trackbed will condition smooth operation. So, it's worthwhile designing and building these parts properly. *Voie Libre* makes a few suggestions.**

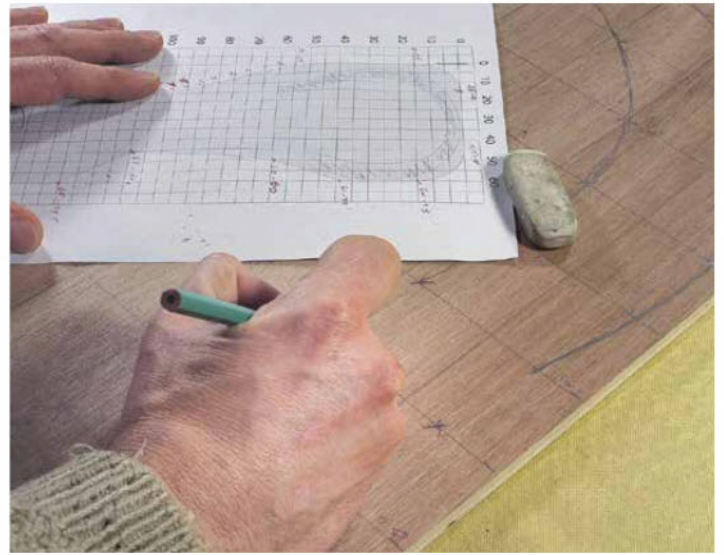
Text and illustrations:  
**ÉRIC FRESNÉ**

**H**ere we go! After two aborted attempts, I have at last started building a new layout. The principles are fairly simple: a stretch of line to run my MinitrainS models. I therefore imagined a two-level layout with a triangular station connected to a large looped fiddleyard. Such a trackplan requires two levels of benchwork connected by a curved gradient. And like a real railway, this infrastructure needs to be stable and well-built for trains to run smoothly.





The grid helps to transfer at the right scale all the drawing lines onto the board.



By referring to my paper plan, I transfer the gradient outline onto the wood. The grid system allows me to position guide points which I then connect. The curves traces itself.

Somewhat put off by previous experiences with boards that were too thin, I opted this time to build my trackbed out of 10mm thick plywood. The improved sturdiness comes with significantly increased mass. I did my best to restrict it as much as possible by optimizing my cuts. The two levels of the layout were cut out of a single sheet measuring 1.80 x 0.60 m. This approach requires a bit of thought at the design stage.

### Optimizing the trackplan

Computer-assisted design greatly helps with initial tracing work. The Raily 4 software that I use offers the possibility of working on a pre-defined grid pattern, in steps of 5cm in my case. On this basis, I built a rectangle corresponding to the general dimensions of my layout, in which I then drew my trackplan. The graphic capabilities of Raily being somewhat restricted, I continued my work by exporting my file to a vector graphics software package. This is done fairly easily by going through PDFCreator ([www.pdfcreator.org/pdfcreator](http://www.pdfcreator.org/pdfcreator)) which manages a good number of image file formats. The vector graphics software (Illustrator CS2® available for free via Adobe®) allowed me to improve the contours of my trackbed and to trace the cutting lines of the gradient and of the curves.



The general outline of the board is much easier to obtain. A machinist square is used to trace the few specific points required to draw the outline.

Office work is now finished. A couple of printouts and we can move to the workshop.

### Walking the plank

With all this preparatory work, moving from the computerized drawing "table" to the plywood one is straightforward. All that is required is to transfer all the tracing onto the wood. To this end, the grid is a great help, in particular when

drawing the curved gradient. By carefully following the plan, I mark with crosses the intersections of the cut line with the grid squares. Without being accurate to within a millimeter, I soon see the outline of my gradient appearing. Connecting the crosses with a pencil-drawn line confirms the final tracing. The outside contours of the main level are easier to trace. For the two curved parts, I use a classroom compass. ●●●





## Smooth gradients

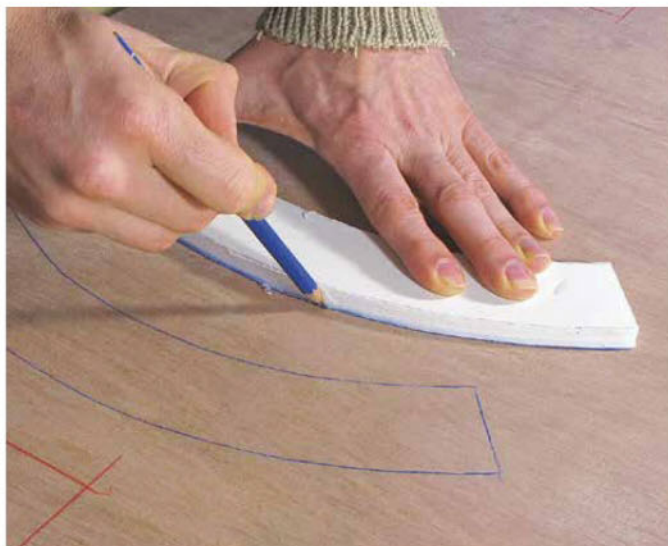
For trains to run over it without trouble, a gradient must be as regular as possible. Above all, it must never display a “break” with the horizontal surfaces at both ends. The simplest way to avoid this problem is to take advantage of the elasticity and weight of the wood mass itself. The gradient isn’t cut out separately from the remainder of the trackbed. It is connected to the latter at its top end. Under the effect of its own weight, it will drop naturally and without any break to the lower level. In this way, the track starts going downhill very gradually, almost unnoticeably, along what is actually quite a steep gradient.



●●● If its hinge isn’t too loose, it is quite sufficiently accurate for my purpose. The side cuts are traced with a square and a ruler, selecting a few specific points on the plan and transferring them to the wood. To finish off the tracing job, I still need to draw the parts that make up the trackbed of the

lower-level fiddleyard. Apart from the track areas which require a solid and flat base, it’s quite possible to make cut-outs in the benchwork. This offers the immediate advantage of reducing its weight. It also frees some of the cut-offs for other uses. As far as I am concerned, the area located between

the two tracks leading out of the triangle can easily be used as a base for the concealed curve. The radius planned for this curve is 23cm. My trackbed therefore consists of segments of a crown with an inside radius of 20cm and an outside radius of 26cm. To be sure to have four identical parts, I



The four crown segments, all identical, are traced with a foam core template which ensures a constant radius from one part to another.



When it comes to cutting, there are no secrets. A good fret saw works wonders with plywood.





The layout is supported by the usual L-girders, connected by joists. The infrastructure for the concealed loop is built out of curved segments and a plywood off-cut.

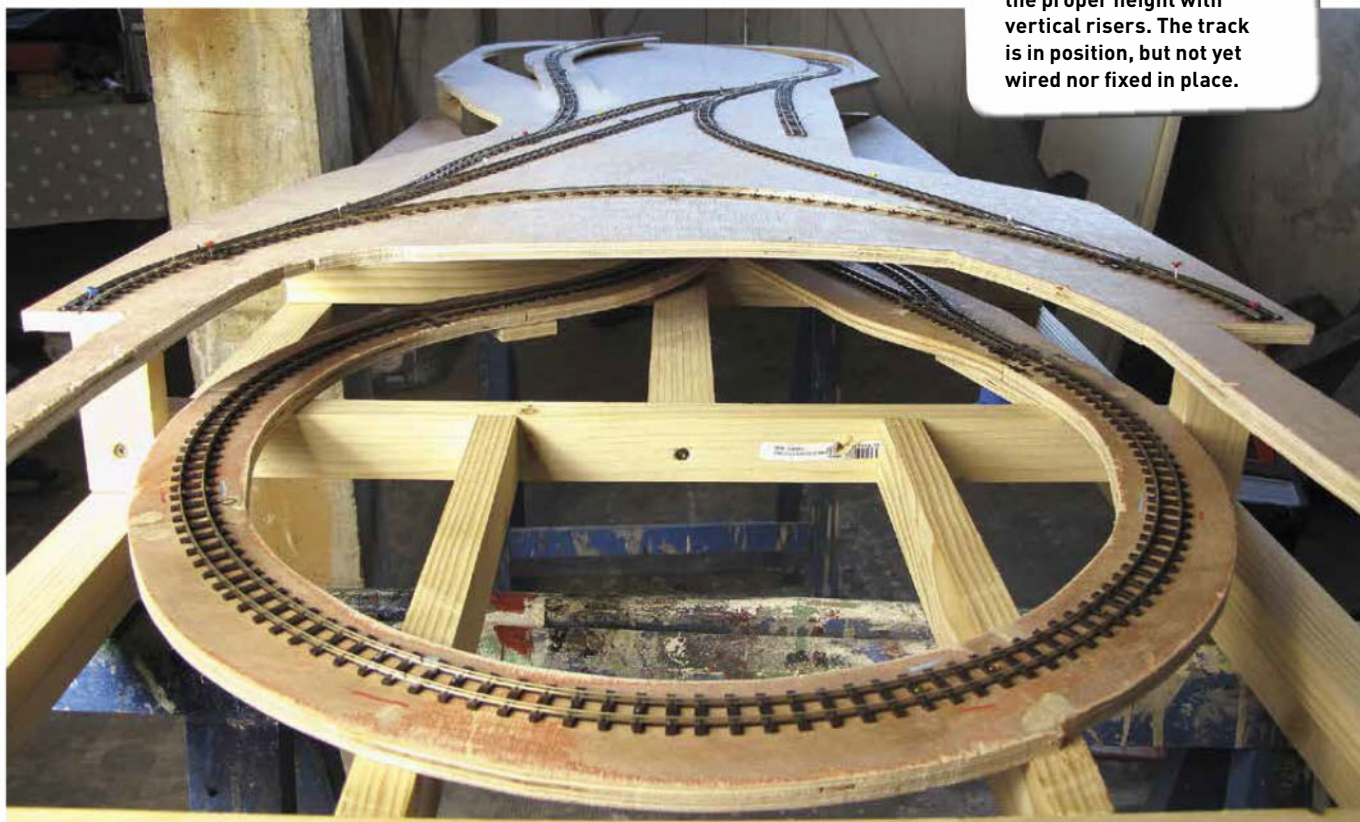
If you want to build this layout, the plan drawn with Raily.4 is available on [blog.voielibre.com](http://blog.voielibre.com)

made a template out of a bit of foam core, and used it as a guide for my tracing.

### Cutting along the lines

Taking all this into account, it's obvious that tracing has taken more time than cutting. For this second job, the ideal tool is naturally a fret saw. With a fine-tooth blade, adapted to plywood, and working slowly, this phase is straightforward.

To support this trackbed, I built a wood infrastructure. Two L-girders are connected by half a dozen joists, which in turn support the lower level. A few vertical risers will support the top level. All this is done without glue, simply with screws. The layout is far from being finished, and I will have to dismantle it several times to lay the track and wire the balloon loop and triangle... A fair bit of work ahead!

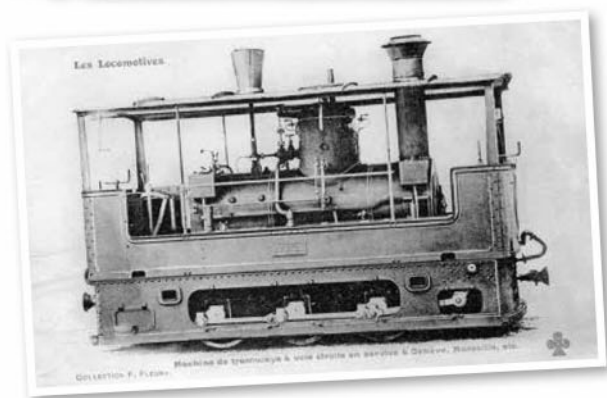


The second level, the main one, is fixed at the proper height with vertical risers. The track is in position, but not yet wired nor fixed in place.





Rolling stock



The Editions  
Atlas model.



# Motorizing the Berne tramway locomotive



Text and illustrations:  
**RAYMOND DUTON**

Shunting in Cerdon station.  
The small tramway locomotive  
has just taken on water!

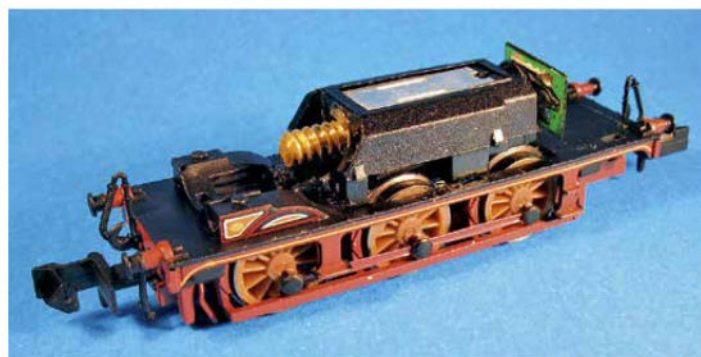




The Dapol model; other liveries are available. We observed a public retailing price of £ 56 in the U.K.



**Raymond Duton is highly talented! He's also a brilliant scratchbuilder! Always on the lookout for any kind of fun, he has motorized and slightly modified the Berne tramways locomotive in 1/87 scale from the Atlas collection. And what's more, he tells us all about it!**



The Dapol driving chassis before modification.

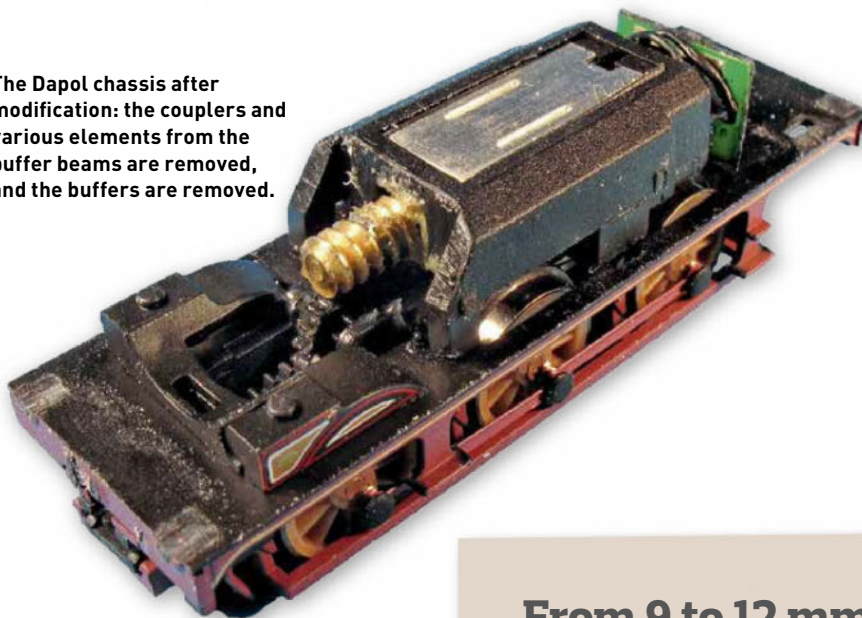
**E**ditions Atlas have released, in the «Tramways Légendaires» collection (as it is known in French), a Berne tramways consist. Not motorized, in H0m scale, it can be very easily adapted to H0e track. This model is available only by subscription, but can nevertheless be found by other means: in swap-meets, on auction or immediate sale sites on Internet, or via a friend who subscribes to the collection and can order a second item. This engine can remain in its original condition, or be repainted or simply weathered – the choice is yours. With a black livery, it can evoke an industrial locomotive.

### The prototype

Some of these locomotives ended their career on the Gex – Ferney line, in the Ain département in France, and very similar models ran on various French tram systems: Brest, Cherbourg, Lyon, Marseille, Saint-Étienne...

The engine and carriages reproduced by Éditions Atlas are used nowadays for special trains on the Berne tramway system and sometimes on other networks. A second locomotive of the same type has been preserved.

The Dapol chassis after modification: the couplers and various elements from the buffer beams are removed, and the buffers are removed.



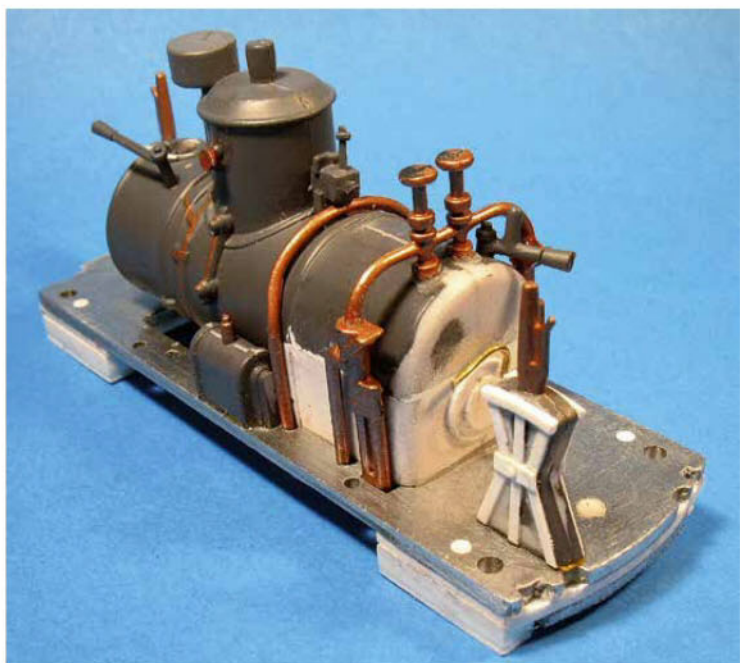
### Motorization

Motorizing this model in H0e is easy if you use an N scale driving chassis from a Dapol "Terrier" 0-6-0 T locomotive. The prototype locomotive being small, the scale model is small also. These compact dimensions mean that the driving chassis fits very discreetly into the ●●●

### From 9 to 12 mm

For experienced meter gauge modellers, H0m gauge axles can be fitted, but this is mechanically a delicate job. The original axles will have to be removed, replaced by longer ones, and the wheels fitted back to the new axles. The footplate will also have to be cut to accommodate the wider gauge axles.





**Modified footplate and boiler.**  
All that's needed are few plastic sheet offcuts and some gentle filing down of the mould seams.

●●● body of the tramway locomotive. The motor fits neatly under the boiler! Cut out a rectangular aperture in the metal footplate of the Atlas locomotive (figure 1). Cut out an opening under the boiler. Add small pieces of plastic sheet on the sides of the firebox to conceal the motor. Take advantage of the opportunity to add a few details on the boiler backhead as well as the smokebox door. Again with plastic sheet, create the tool cases and a coal bunker. These two elements will allow the footplate to be fixed under the body using screws.

### Couplers

The couplers are based on Peco's reference GR-101 00-9 Narrow Gauge Coupler Kit (figure 2). As the engine has a significant overhang, it is advisable to make the hook mobile, so that it can swivel on curves and not derail the leading vehicle. The Peco couplers are cut back, and fitted with metal hooks articulated on the buffer shank. ■

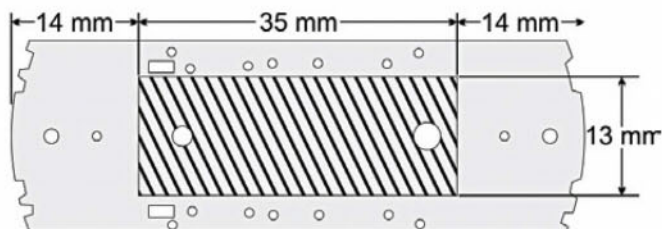


Figure 1

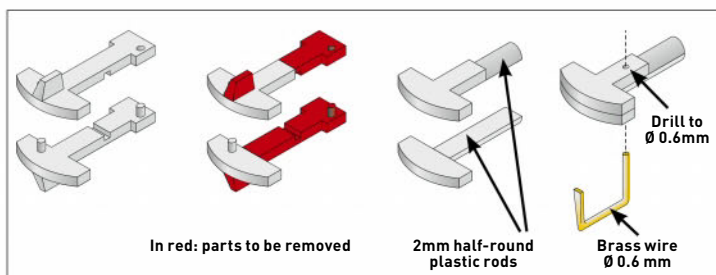


Figure 2

## Bibliography

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<<http://www.dampftram.ch/lok12/>>  
<[http://fr.wikipedia.org/wiki/Soci%C3%A9t%C3%A9\\_anonyme\\_du\\_tramway\\_de\\_Gex\\_%C3%A0\\_Ferney](http://fr.wikipedia.org/wiki/Soci%C3%A9t%C3%A9_anonyme_du_tramway_de_Gex_%C3%A0_Ferney)>  
<[https://www.youtube.com/watch?v=SYV\\_1otdPLU](https://www.youtube.com/watch?v=SYV_1otdPLU)>

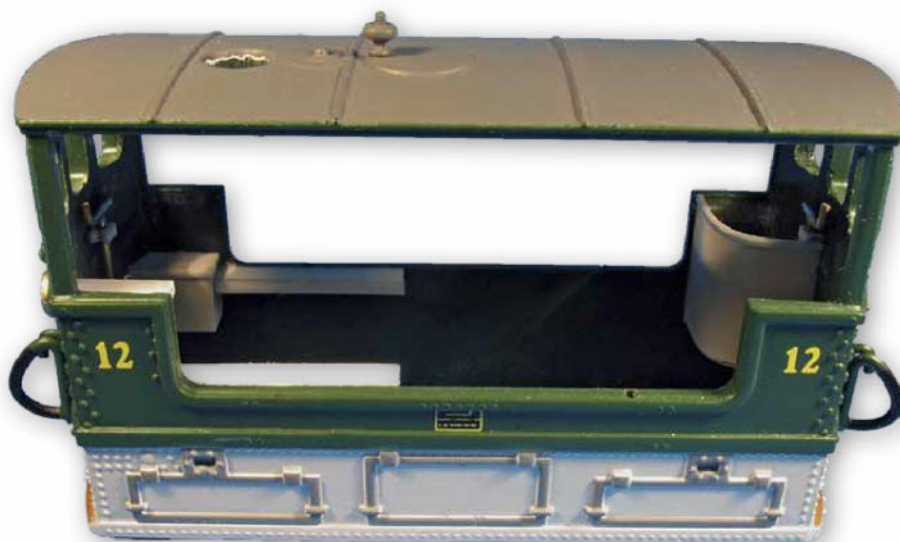
### Dapol site

<<http://dapol.co.uk>>

Direct sale possible, but British retailers are often cheaper!

### Book

Henri DOMENGIE, *Les petits trains de jadis, Sud-Est de la France*, Les Éditions du Cabri, Breil-sur-Roya, France, April 1985.



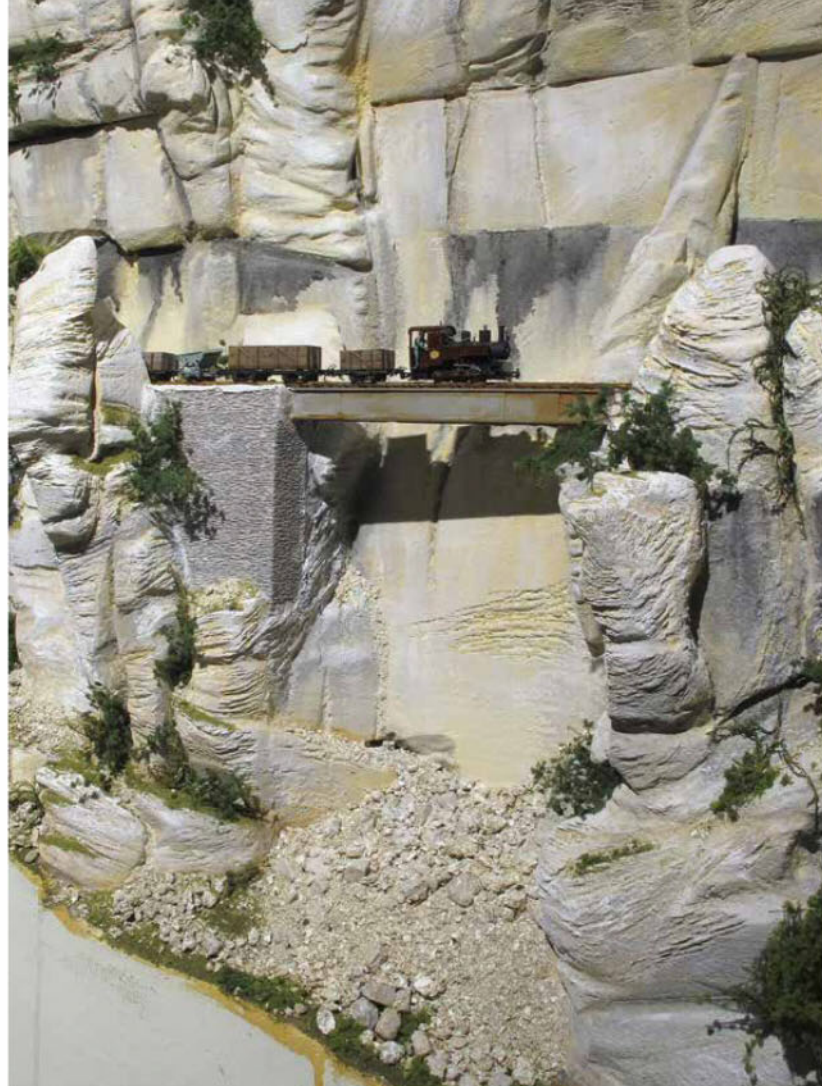
The body fitted with tool cases and side plates.





# A cliff-hanger

Narrow gauge railways can reach everywhere, or almost! If cliff-side lines are fairly frequent in real life, this theme is less common on layouts. Here are a few simple recipes to evoke this type of scenery, and the material and tools required for such a project.



The Decauville Progrès 0-6-0 T looks tiny in this awesome scenery!

## Materials & tools

- Extruded polystyrene thermal insulation sheets, thickness 5cm
- 10mm thick plywood
- Crushed stones: limestone or fine sandstone
- Powdered paper paste
- Casting plaster
- Hacksaw or wood saw
- Rasps, various sized files
- Sandpaper of various grains
- Hot-glue gun and hot melt adhesive sticks
- Wood glue
- 20mm wide paintbrush, painter's knife, scalpel, etc.

**T**he aim is to create a limestone cliff, 120cm long and 75cm high. The track will be laid 40cm above the lowest point of the cliff. This piece of scenery, which represents a surface of 0.9 m<sup>2</sup>, will take place on a large layout. It must be lightweight, easily transportable and rigid so that train operations can take place smoothly. I opted therefore for simple materials that are readily available and easy to use. The infrastructure and rocks are made of thermal insulation sheets, while the trackbed is 10mm thick plywood.

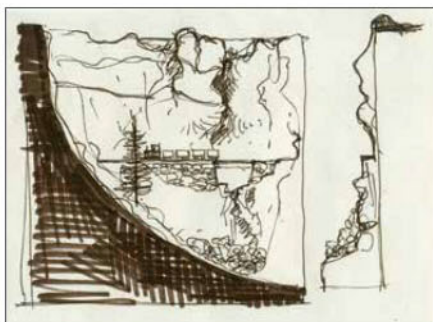
It's hard to evoke such an impressive cliff without reliable documentation. The sedimentary layers must be given the proper orientation, the breaks in the terrain and the erosion areas must be modelled. A realistic result will depend on all these features being properly modelled. I made a rough sketch showing the main areas of the cliff. Finding a suitable prototype is no longer a problem ●●●



The entire structure consists of extruded polystyrene, a sturdy and lightweight material.

Text and illustrations:  
**FRANÇOIS FONTANA**





The polystyrene is cut with a saw.

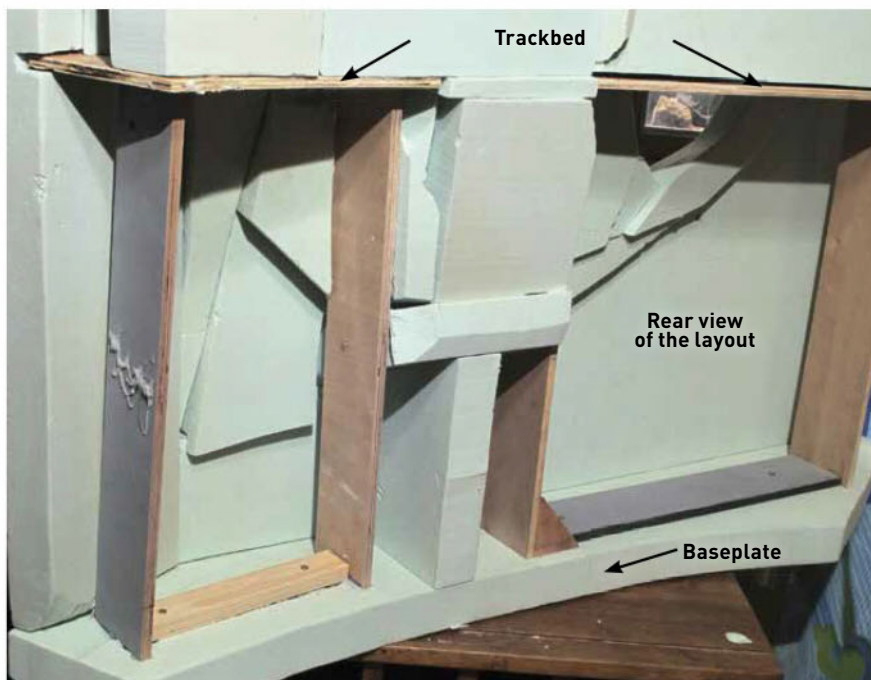


The pieces are glued together with a generous coat of hot melt adhesive.

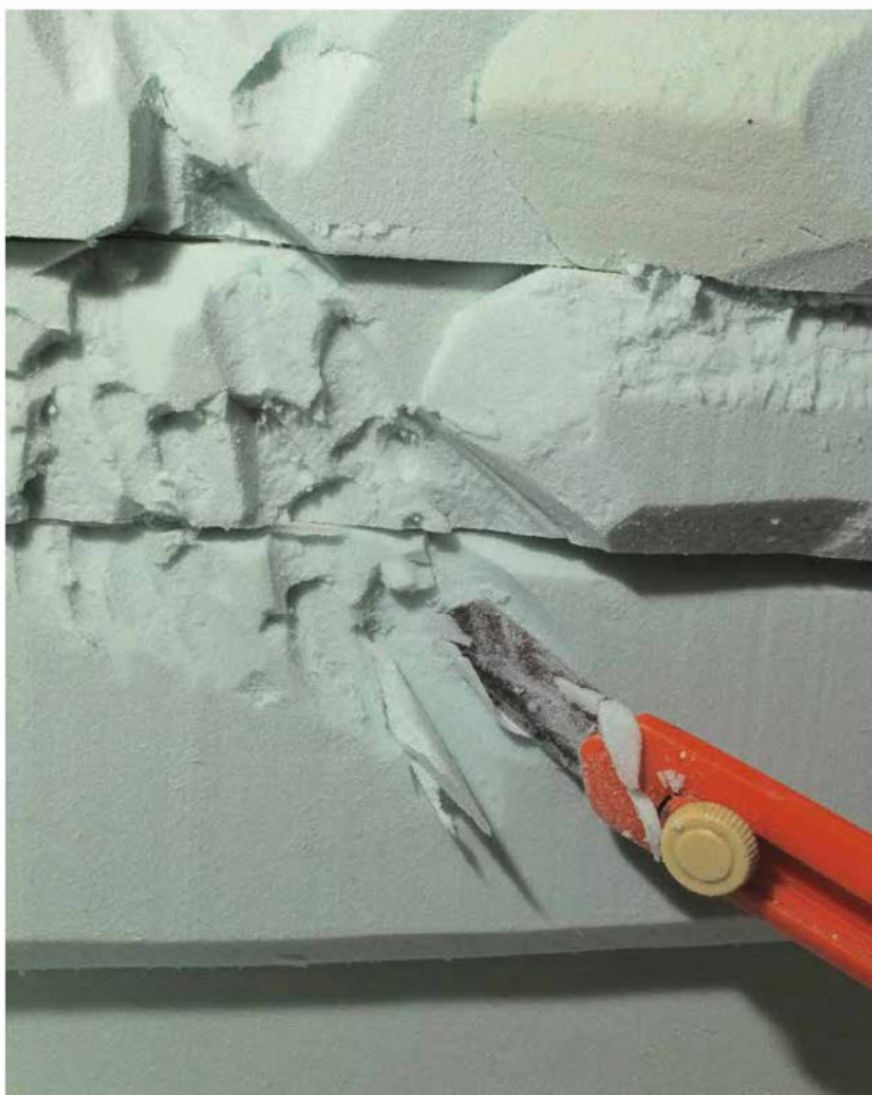
●●● for people who don't live near a natural site: a specific request on any search engine and the joys of limestone, karst or granite cliffs are all yours!

## Infrastructure

To build the basic scenery, I used 5cm thick extruded polystyrene. I found some green-coloured material with a very fine grain, and very easy to work. The pieces are cut out with a saw, I have a small ribbon saw but you can equally



The plywood trackbed is glued to the baseplate.



The blade is inserted into the polystyrene, and the shaving torn off.



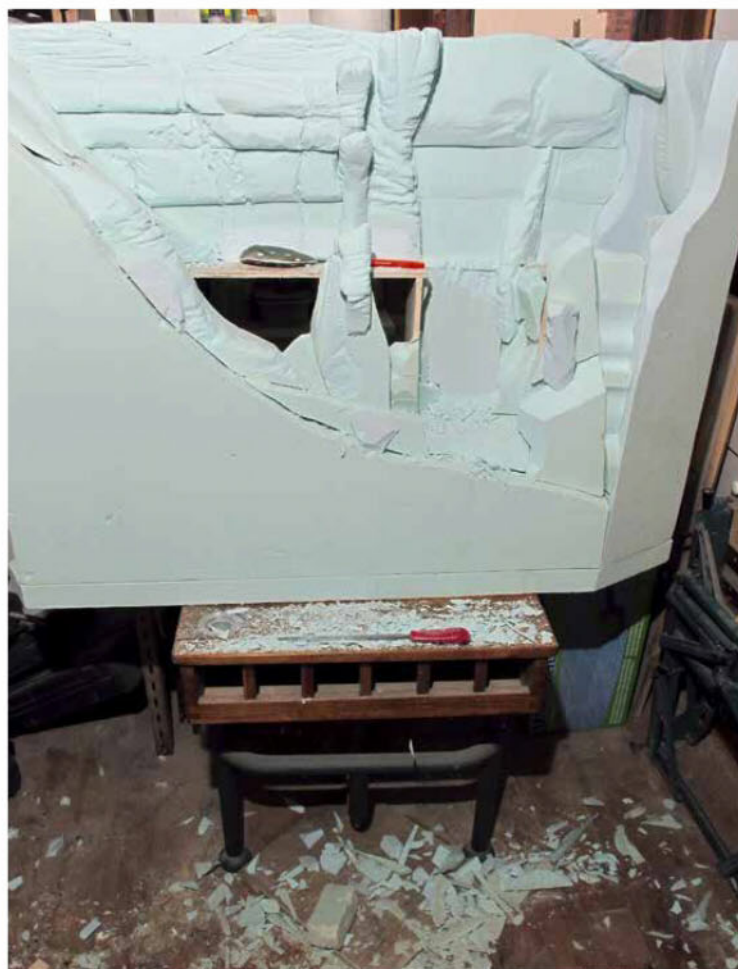
well use a good old wood hand saw. The elements are assembled on the base plate with hot melt adhesive. Check first that the adhesive doesn't dissolve the polystyrene. If this is the case, simply use fast setting wood glue. Wait a whole day for the glue to set thoroughly, this will ensure that the assembly is sturdy. The trackbed, cut out of 10mm thick plywood, fits into the polystyrene volumes. Here again, the wood is glued to the polystyrene with hot melt adhesive.

### Creating the rock masses

The layers of sedimentary rock are reproduced with the polystyrene. Each layer is created independently from the others. In my project, the layers are horizontal, but I could also have laid them at an angle, the principle remains the



The cracks are opened up with sandpaper, I use the same tool to shape the curved parts.



I must admit... this is messy work! The rough work is finished; it's time to take a step back.

same. With the saw, I cut some sheets to a thickness of 3cm, some blocks are 5cm wide, others 4cm. I glued the blocks in place following my sketch. In a first phase, the volumes are simply evoked.

Once all this is in place, the sculpting phase proper can begin. Do this somewhere that will not entail dire consequences: shavings all over the place, the family knick-knacks coated with dust, don't risk being expelled from the living-room for good! For the rough work, I use a fitted carpet scalpel or a sharp pocket-knife. I slice into the polystyrene and pull off the shaving, the break is very evocative. Crevices are dug in the same way. A few energetic strokes with a wire brush and coarse sandpaper will create pleated reliefs. Work over the whole surface at the same time, the cliff must be visible everywhere, don't focus on one area to the detriment of the overall appearance.

### Some details

My cliff is beginning to take shape. I must now get rid of this weird green colour; stone is grey, off-white or beige! A coat of acrylic paint, with a touch ●●●





The blend of paper paste and plaster is applied with a spatula.



The ground is textured by stippling it with a dry paintbrush.



Some over-sharp lines are broken by re-sculpting the area.



After a first coat of paint, the work is refined. Here with a wire brush to create cracks.



After having completely covered the cliff with an off-white shade, I brush on some large ochre stains.

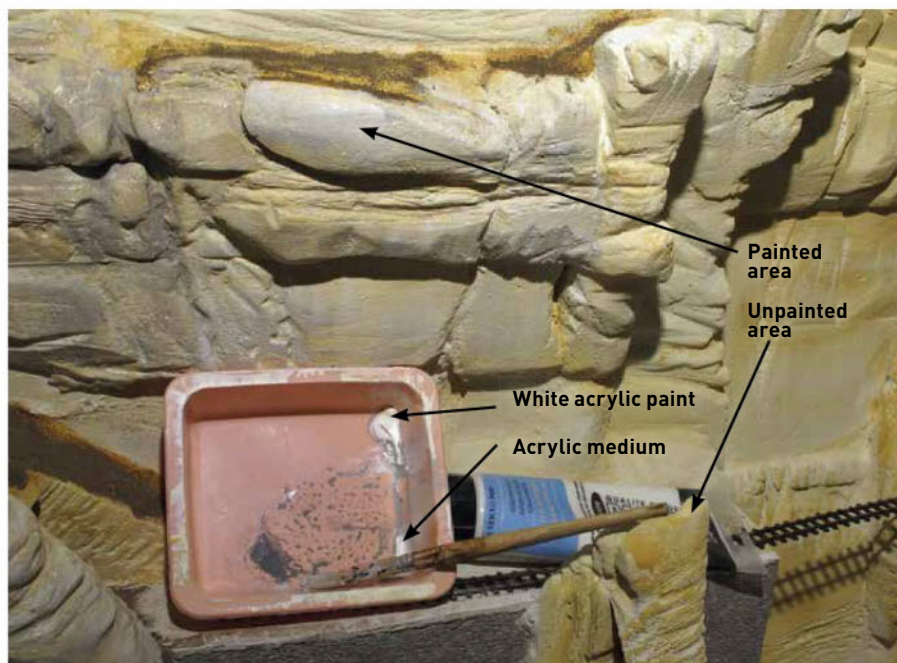
●●● of modelling plaster and paper paste added, is applied to the whole surface. These materials will give some grain to the rock surfaces. The proportion for one glass of paint is one table spoonful of plaster and paste. Once this coat is dry, careful observation tells me where more sculpting work is required, which part needs finishing off, what must be removed. When everything is visually acceptable, another coat is applied. A 50/50 blend of paper paste and modelling plaster, spread with a knife, is used to create the earth bases and the foot of the rocks. Once this is dry, the earth areas are painted brown.

## Colouring

The base colour is then applied to the whole cliff. An off-white shade with a touch of beige. On many photos one can observe yellow ochre stains, the presence of iron in the layers explains this colouring. This feature is reproduced by brushing on yellow ochre in a very irregular way, with large strokes of the brush.

To obtain the (less than 50...) shades of grey, I revert to the cliff with equal parts of white acrylic paint and acrylic medium, with a touch of black added. The medium provides transparency. With this technique, the ochre colour will remain visible through the coats





The coats of paint, blended with acrylic medium, are applied one after the other. They must be irregular to create variations in appearance.

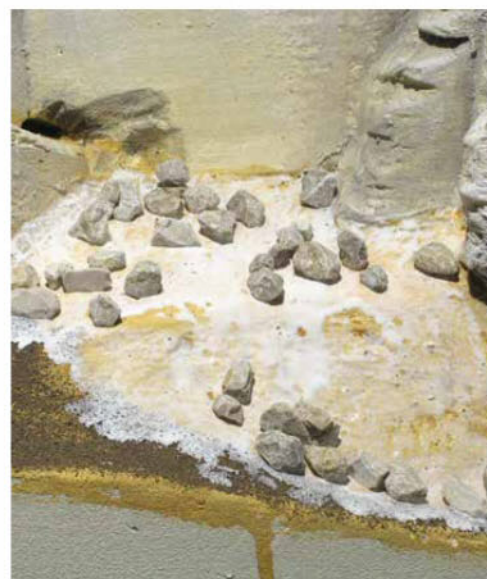
subsequently applied over it. Take your time, let each coat dry out before applying the next.

### Fallen rocks

The bottom of the cliff as well as the edges of the trackbed are covered with fallen rock. I used a natural material to model this: a very fragile sandstone crushed with a hammer. The larger pieces are arranged in a coat of wood glue. Then, I sprinkle smaller pieces and

rock dust over these blocks. Glue is generously applied to the fallen rock with a pipette. Several applications will be needed.

The job is over as far as the rocky parts are concerned. The scene must now be brought to life! ■



The large pieces of fallen rock are arranged on a layer of wood glue.

### For colouring

- Base coat: matt acrylic white
- Colours: matt black, light grey gris clair, yellow ochre
- Matt acrylic medium



The finer material is poured on. It's glued in place afterwards with a blend of wood glue and water, to which a drop of washing-up liquid has been added, and is applied with a pipette.





# A fine retaining wall

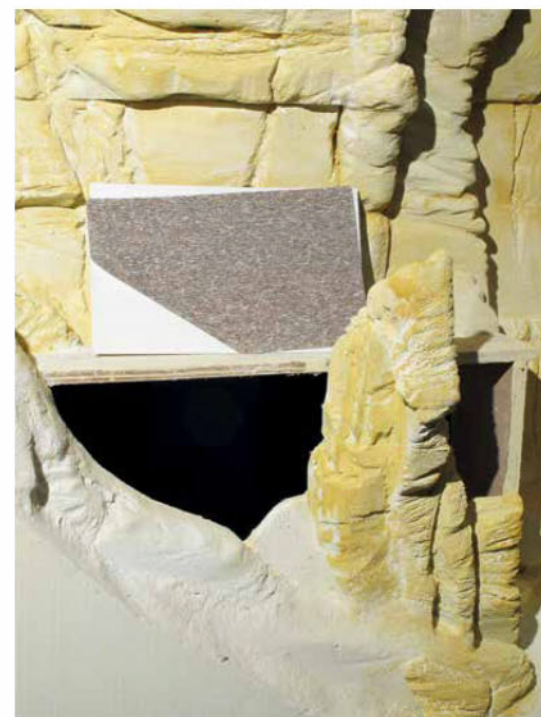
The plywood trackbed hugs the cliff and crosses a sinkhole on a bold girder bridge! The retaining wall is built with the materials available on site, there's no point in shipping stone from somewhere else when there's plenty available on the spot!

Text and illustrations:

**FRANÇOIS FONTANA**



**M**y wall is simple, it's a purely functional piece of civil engineering, and no one will ever come and observe it where it stands! Who would think of exploring the fallen rocks alone with the chamois? No frills, no elaborate quoins, no mouldings. Stones upon stones, and that's all! A self-adhesive texture sheet of Redutex type will do fine. The first job consists in cutting the wall support out of fine card. It has to fit behind the boulders and alongside the



The wall fills the gap. The card is cut to the general shape.

trackbed. The texture sheet is glued onto the card, the colour is unsuitable but we'll return to this later. The texture is glued in place: hot-melt glue against the polystyrene, wood glue against the trackbed.

Once the adhesives have set, I fill in the joint between wall and rock with air-drying plasticine. The box-culvert is opened up with a scalpel. A block of polystyrene is cut to the same format, painted black and fitted behind the wall to give an impression of depth. The large stones



The outer edge is filled with air-drying plasticine.



The box-culvert is opened with a scalpel.

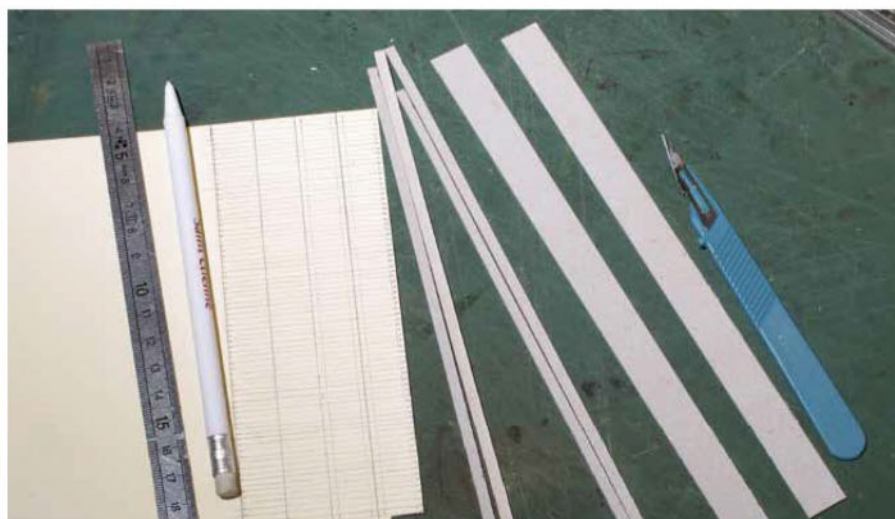




The block of polystyrene, with the hole painted black, will take place behind the opening.



Card cladding simulates the stones surrounding the box-culvert.

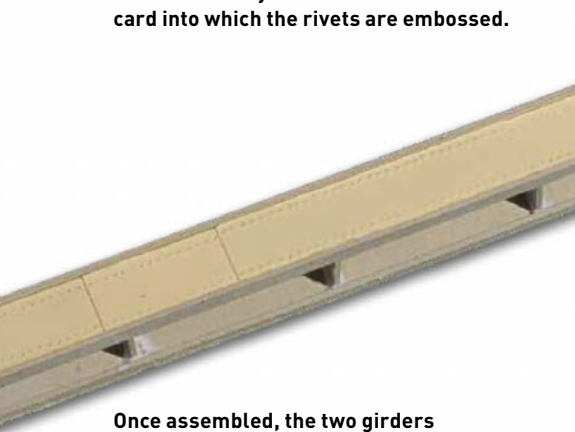


The bridge girders are cut out of 1mm thick card. They are then clad with thin card into which the rivets are embossed.

located around the box-culvert are represented by a frame of grey card, glued in place with wood glue.

The top of the wall is crowned by a row of more accurately cut stones, made out of air-drying plasticine. I fit a ribbon of plasticine flattened into shape. Once dry, with the blade of the scalpel, I engrave the stone joints. ■

Once it has been weathered, the bridge is installed on the layout. The joints are filled with air-drying plasticine.



Once assembled, the two girders are fixed together with 12mm long cross-beams. The bridge is then painted light grey.







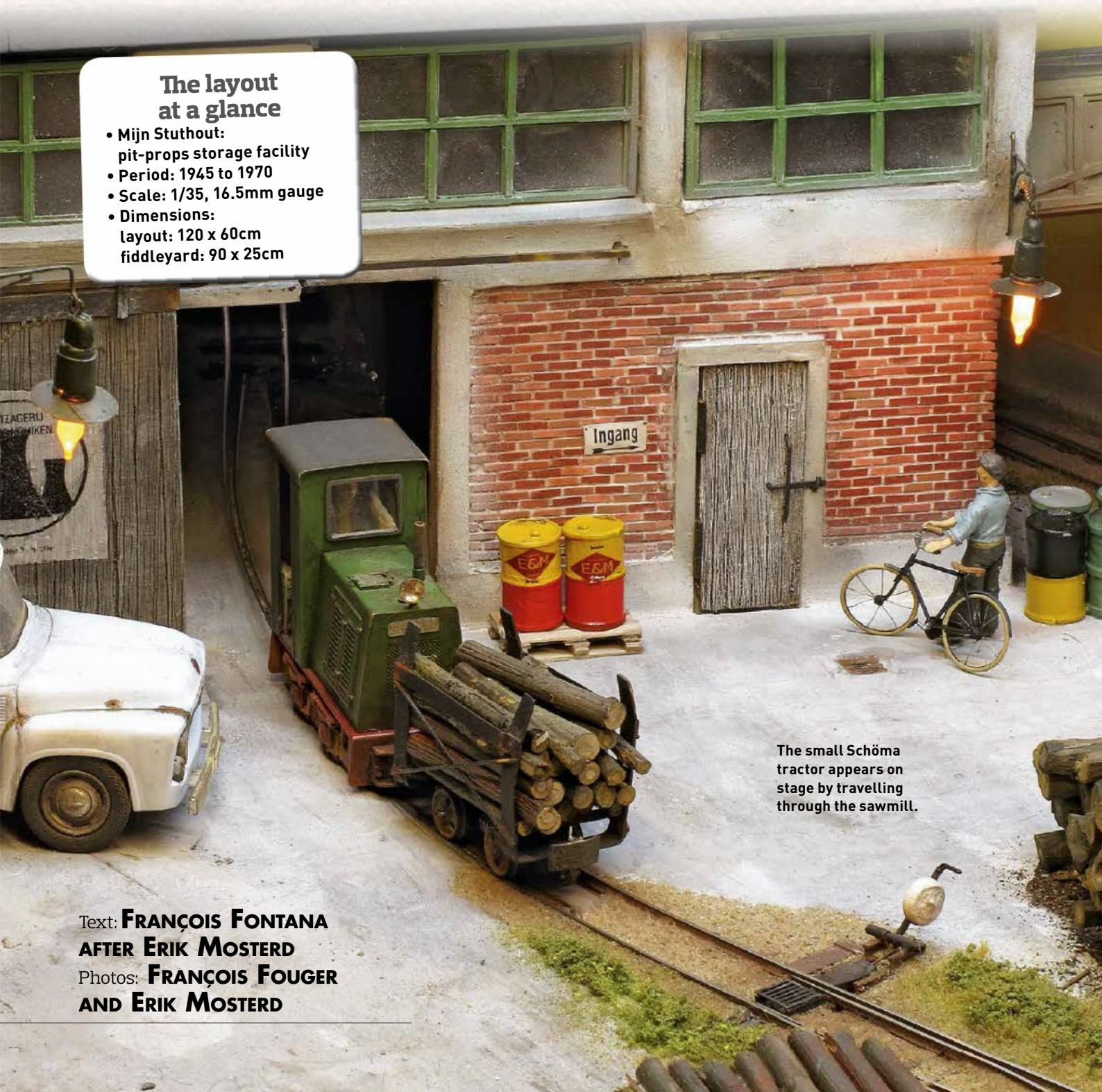
1/35 scale layout

# Mijn Stuthout

a storage and treatment facility  
for pit-props in 1/35 scale

## The layout at a glance

- Mijn Stuthout:  
pit-props storage facility
- Period: 1945 to 1970
- Scale: 1/35, 16.5mm gauge
- Dimensions:  
layout: 120 x 60cm  
fiddleyard: 90 x 25cm



The small Schöma tractor appears on stage by travelling through the sawmill.

Text: **FRANÇOIS FONTANA**  
AFTER **ERIK MOSTERD**  
Photos: **FRANÇOIS FOUGER**  
AND **ERIK MOSTERD**





**Mijn Stuthout is an exhibition layout in 1/35 scale. Designed like a small theatre with its actors and carefully staged scenes. Its author, Erik Mosterd, tells us a few of his many secrets.**

**W**e discovered Mijn Stuthout at Utrecht during the OnTraxs show. It's a small railway theatre whose actors are trains carrying pit-props. The actions are carefully rehearsed and unfold following a very accurate script. The layout features an on-board Ossynths sound system in the locotractor, and modular day-night ligh-

ing. Erik Mosterd, its creator, explains the thought process behind his project.

**François Fontana: Hallo Erik, you created a layout specially for display in shows. This means you implemented basic rules. Tell us more.**

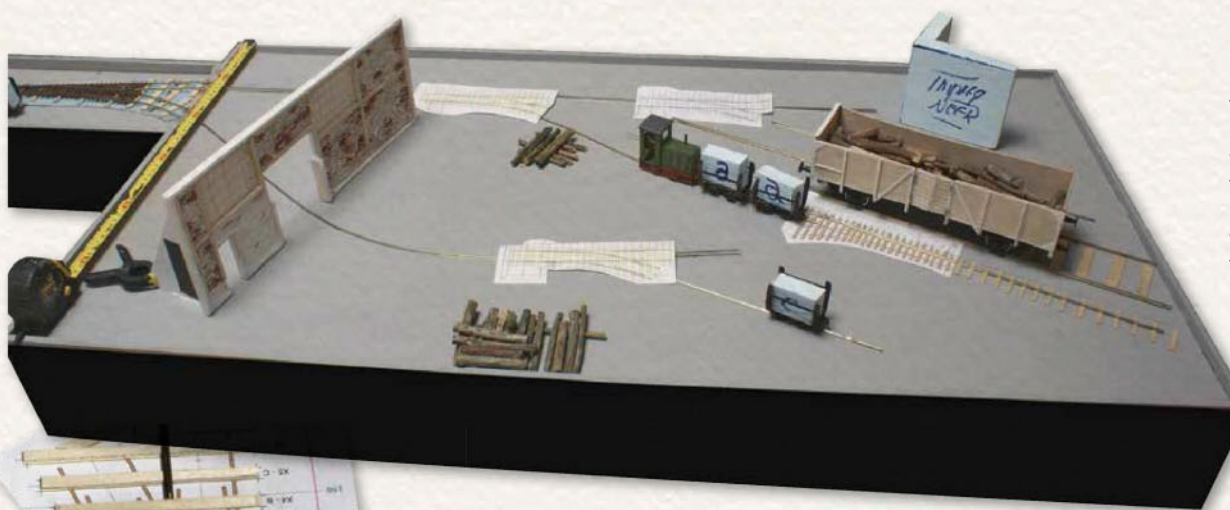
**Erik Mosterd:** Hallo, Mijn Stouthout is a mining layout, the modeled scene repre-

sents the storage and treatment facility for the pit-props. My first task consisted in writing down a set of rules, to avoid repeating some of the mistakes made when building my previous layouts.

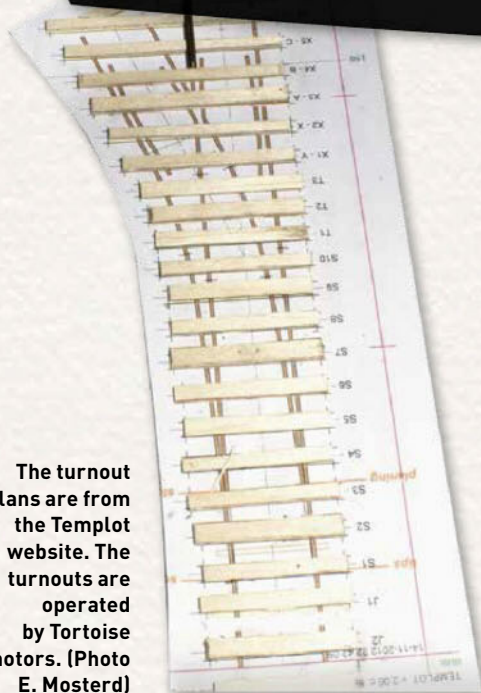
- Choosing a historical theme and documenting it thoroughly.
- Creating a one-piece curved backscene.
- Planning escape points concealed inside buildings, by doors or behind trees, for the rolling stock to enter and leave the "stage".
- Having an explanatory panel for the public.
- More importantly: ensuring a very high standard for the rolling stock, ●●●



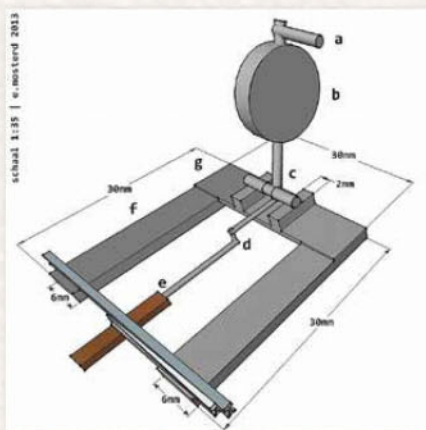




Once the woodwork is complete, the tracks and volumes are put in place to check the viability of the project. (Photo E. Mosterd)



The turnout plans are from the Templot website. The turnouts are operated by Tortoise motors. (Photo E. Mosterd)



The working turnout levers were carefully drawn before being built. (Graphics by E.Mosterd)

●●● both in terms of appearance and running qualities. This is something men notice.

- Imagine permanent movements on the layout; that's for the children.
- Not forgetting that women are often more sensitive to the quality of the scenery and of the vegetation. These aspects must be handled with particular care.
- Finally, the layout must fit into my family car and in the room where it is kept at home. For this reason, it measures 120 x 60cm. Naturally, it travels with my standard fiddleyard and a small interface.



The track is embedded in the ground, only the turnouts have wooden sleepers. The levers are operational.

**FF: All the rules are laid down on paper, you know the constraints, and you know how an equivalent prototype works, what is then your first job?**

EM: I make a kind of simplified mock-up with an accurate trackplan and some rough volumes. This phase helps me confirm my operating scheme and the implementation of my scenarios. This pre-model also enables me to determine the number of trucks I need to build, as a function of the activity and siding lengths.

**FF: The plan is finalized, the infrastructure is built, let's turn to track-laying.**

EM: As the ground in this type of facility was largely covered with bark, mud and sand, which reach up to the rails, accurately modelling the sleepers isn't necessary. I use 2mm wide copper-clad epoxy strips to which I solder Peco code 100 rails for the main tracks, and code





The buildings, all fully scratchbuilt, are all different. The sliding door is motorized; to ease its maintenance, the roof is a simple push-fit.

83 for the sidings. I use a Peco IL-116 gauge, very useful to ensure proper gauging. The standard gauge track is fitted with code 200 rail. Turnouts are built using templates printed on paper. These templates are available on a web-

site I recommend: [templot2](http://templot2) ([www.templot.com](http://www.templot.com)).

**FF: You took particular care when representing the turnout lever counterweights?**

**EM:** Yes, these are whitmetal castings. I made a master model using a button battery, and then made a mould. The counterweights are cast and glued onto the levers.

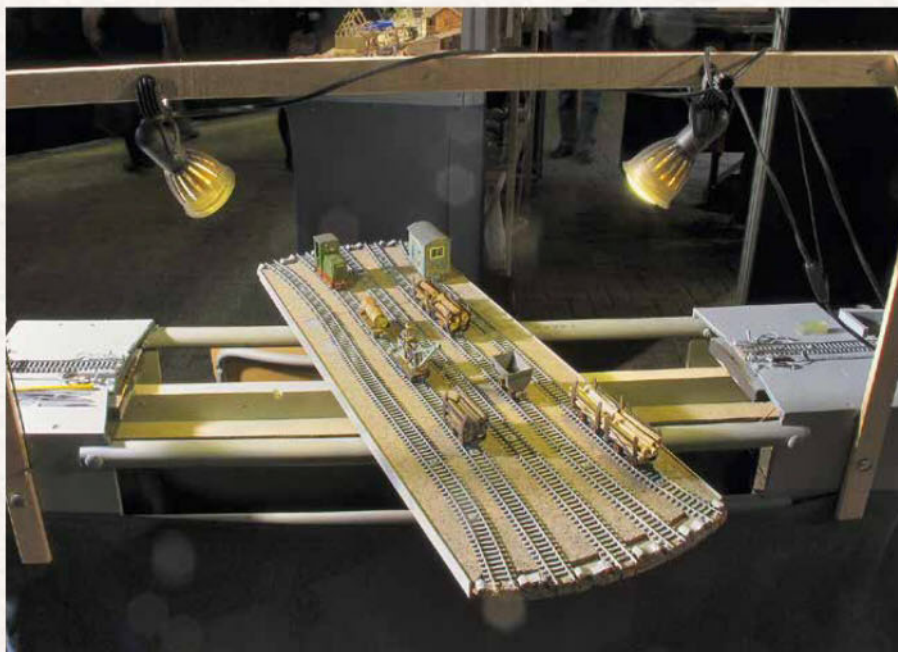
**FF: Naturally, all the buildings are scratchbuilt?**

**EM:** I had to make three different types of masonry: a brick wall, a rendered wall and a third one whose damaged rendering lets the bricks show. The buildings are made out of Forex®, a type of expanded PVC. The walls are assembled with hot glue. This is simple and sturdy.

The walls of the sawmill are made of brick. Each brick, Juweela elements, is glued to the Forex®. Once a row is complete, I glue a strip of plastic sheet to represent the joint and ensure regular spacing. And I start on another row. The joints are then given a coat of clay milk. Where the buildings are supposed to be made of concrete, I use cast plaster. Very fine sand is added to the plaster to provide a grainy appearance.

**FF: Tell us about your rolling stock!**

**EM:** I already had the Schöma tractor, but I had to build all the trucks. I used ●●●



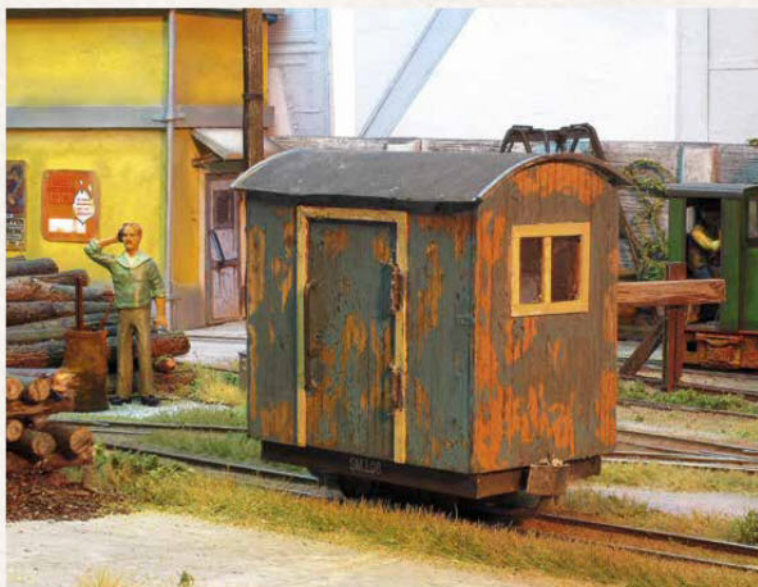
The layout would not be complete without a large fiddleyard. Erik uses it for all his 16.5mm gauge layouts.





●●● a plan and photographs from the Hovers Construtie manufacturer's catalogue. The pictures helped me determine what the chassis skeleton looked like and the relationship between the various parts. I scaled down the plan to 1/35 and built my first truck out of brass. The main chassis girder was ballasted with lead, and is fitted with 12mm diameter Alan Gibson wheels.

They all have a solid web with three holes. Couplings are three-link chain. The standard gauge open wagon was built on a Märklin chassis in I scale. The planks are from a cedar cigar box. The metalwork is made out of plastic strips with embossed rivets. I sub-contracted the decals to a friend of mine who has a printer with a white ink cartridge. ■



A few bits of brass, some planks from a cigar box and plastic sheet. That's all you need to build an attractive wagon.



At the front of the layout, a neglected area has provided the opportunity for a very attractive cameo.



A dental hook is used to engrave the cracks. (Photo E. Mosterd)

## The wall shows its undies!

To create a decrepit wall, I start by gluing brickwork to a sheet of Forex®. Then I cut out segments of this masonry, and place them flat in a tray in which plaster will be cast. I take a picture of this set-up before pouring the plaster, so as to know where the interesting areas are located. Once the plaster has set, I scratch the plaster off the areas where there are bricks, using a dentist's tool. I decorate the wall with watercolour washes, and enhance the shadows in the cracks with a wash of India ink. A coat of semi-matt varnish completes the job.





The perspective on the right-hand side of the layout is closed by a tall building. The creeper which covers the front is made out of... creeper roots! They were oven-dried before being flocked.



The scenes are very atmospheric, and all the elements have been given a very homogeneous weathering, a key factor in well-designed realism.





A square plate measuring 25 x 25mm, made out of 2mm thick plastic sheet, carries two felt pads. A simple spherical joint gives the handle total freedom in all directions. Simply push the device along the track, and it's clean! A few wood off-cuts, three drawer castors, a bolt with a wing nut and we're in business for bending rails!

# Rails: cleaning them and bending them!

**Voie Libre** readers are highly ingenious, and some of their designs are worthy of our attention. Here are a couple of small devices for working on rails: one to clean them, the other to bend them.

Text and photos:

**THOMAS SCHMID,  
SERGE L.**

**T**homas Schmid and Serge L. respectively explain two simple, but very convenient, devices. Both modellers were facing basic questions and imagined pragmatic solutions to them. In both cases, the result is surprising, and in both cases, these devices are easily built by any enthusiast with minimal tooling and a few standard supplies.

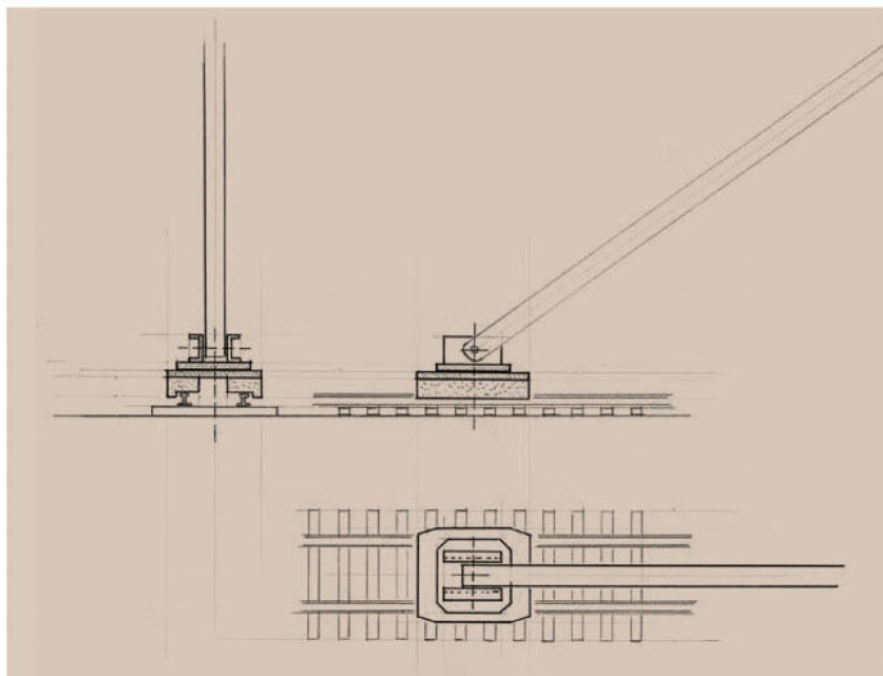
## Cleaning time!

To clean the track on his new layout, Thomas built a simple device: an articulated support, fitted with a handle, carries two felt pads. The spherical joint means that all curves can be followed, and the handle ensures an easy reach inside tunnels. The device is straightforward to make, and Thomas shows us how to proceed in a few pictures. ●●●



## Main supplies

- 2mm thick plastic sheet: 25 x 25 and 20 x 20mm
- 8mm U-shaped plastic rod: two 16mm lengths
- Two 2 or 3mm diameter nuts and bolts. Maximum length 16mm
- A wood or metal handle, 5 x 5 and 200mm long
- Strong density felt (for Thomas, System Jörger felt, Dorfstr. 34C, D-82178 Puchheim, Germany. Phone. +49 89 803260)



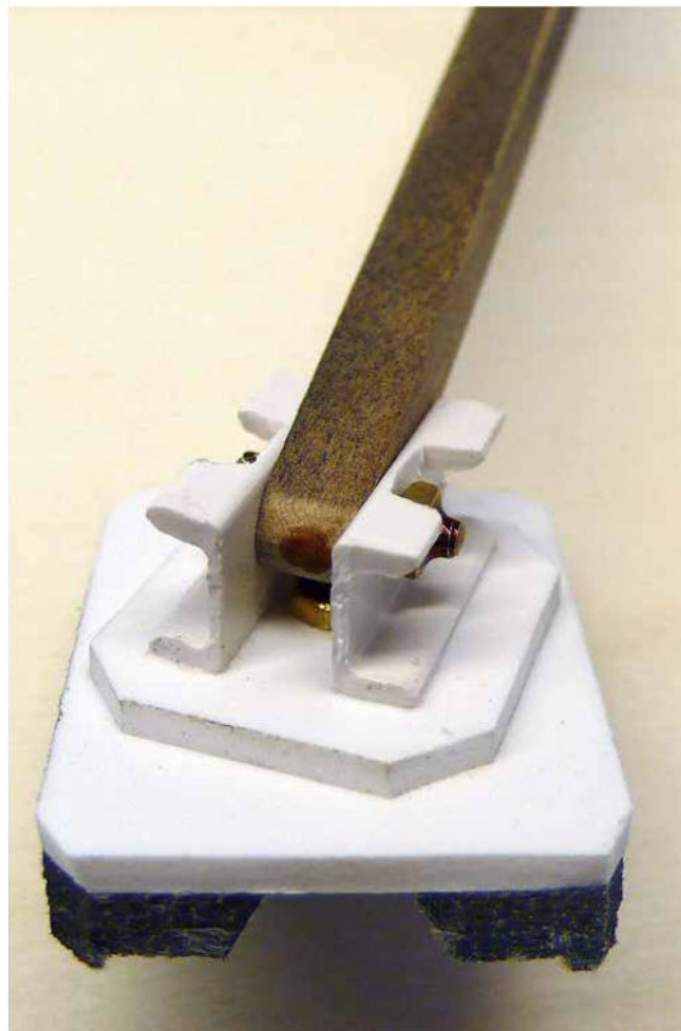
This small drawing will make it easy for everyone to build the device. Adapt the dimensions to your favourite gauge and hey presto!



The two plates are held together by a simple nut and bolt. This enables them to rotate freely one on the other. The felt pads are cut to shape to conform to the track profile, so as to follow the rails.



A few drops of 70% alcohol improve the cleaning potential of the pads!



The second part of the knuckle is the articulation of the handle. Note the drop of locking medium which holds the nut on the bolt: it's best to avoid losing the cleaning device, the nut and the bolt in the middle of a curved tunnel...





A simple and affordable device for pleasingly curved track.

### A rail bending jig, just like the real ones!

Flexible track is undeniably useful, but the metal does remain elastic and tends to revert obstinately to its original shape. Plastic chairs can break, becoming brittle over time.

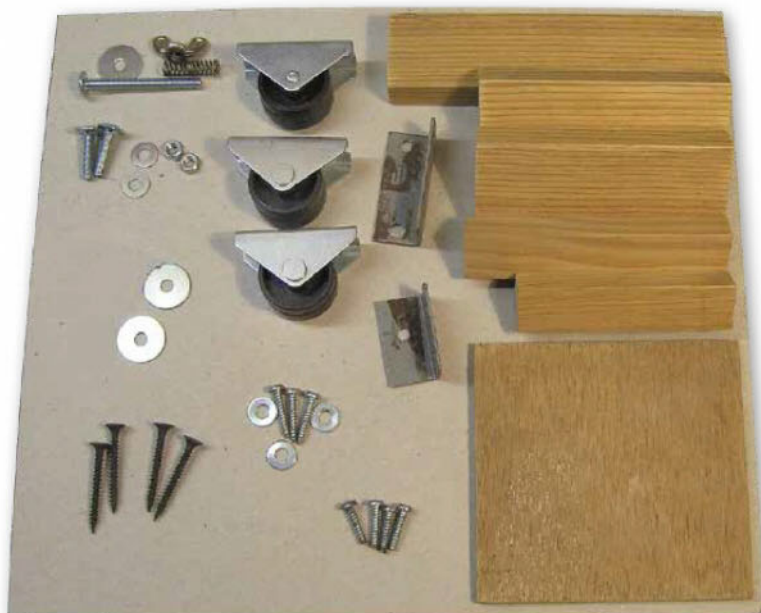
To avoid this problem, the simplest approach consists in bending the rails before laying the track. To do so, I

built a rail bending jig inspired by various things devices seen on Internet. The supplies required are quite ordinary. Fabricating the jig requires nothing more sophisticated than a cutting disk fitted to a mini-drill. After just an afternoon's work, you'll have a continuously adjustable bending jig, to which you can apply the IMIM brand (I Made It Myself)! ■

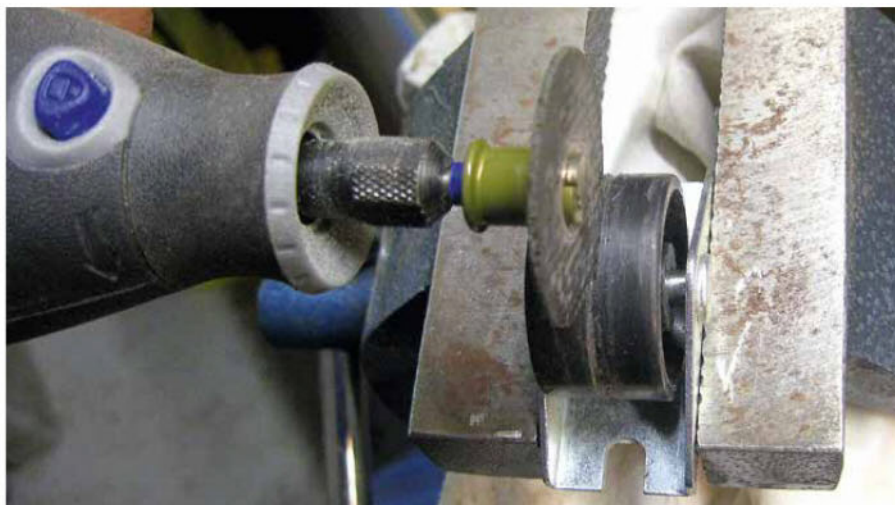
#### Main supplies

- Three 30mm diameter castors
- 5mm thick plastic sheet: 10.5 x 10.5cm
- 18 x 35mm lumber: two 10.5cm lengths, one 14cm length
- 15 x 20mm lumber: one 10.5cm length, one 8.5cm length
- 20 x 20mm metal L-girder: 1 x 50 mm, 1 x 35mm
- Wood screws: four 3 x 35mm, seven 3 x 20mm
- Stove bolts: two 5 x 20mm, one 5 x 45mm
- Three 5 x 20mm washers
- One 5mm wing nut
- One spring

Some wood, some basic fastenings and three castors. The necessary supplies can be found easily in any DIY store.



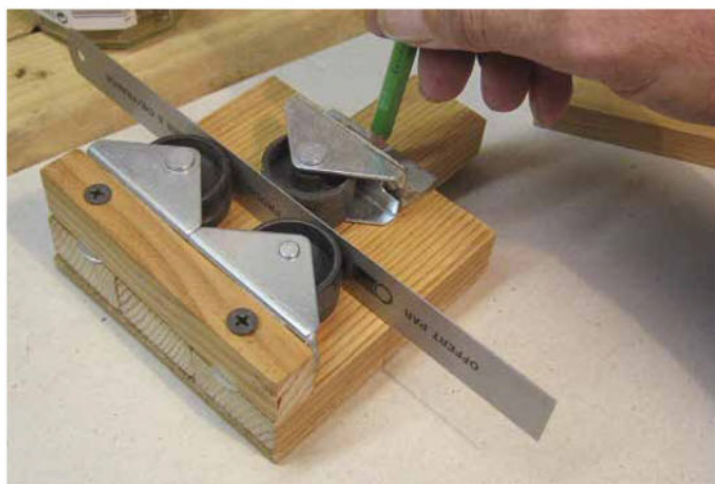




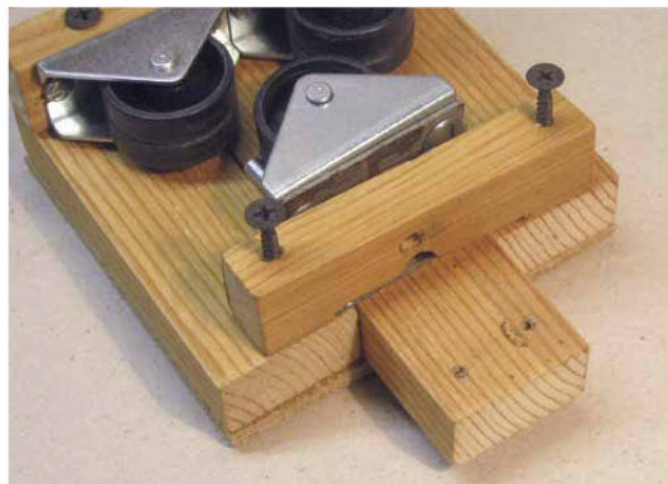
This is the only tricky part of the work: the castor is firmly held in the jaws of a vice. Using a cutting disk, fitted to your mini-drill, you must cut a circular groove around the middle of the wheel.



The base consists of two lengths of lumber, glued to a sheet of plywood, with two of the castors and their brackets fixed on top. The two washers are there to ensure that the rotation plane of the castors remains truly perpendicular to the base. A third length of wood, mobile, slots into the housing below the castors.

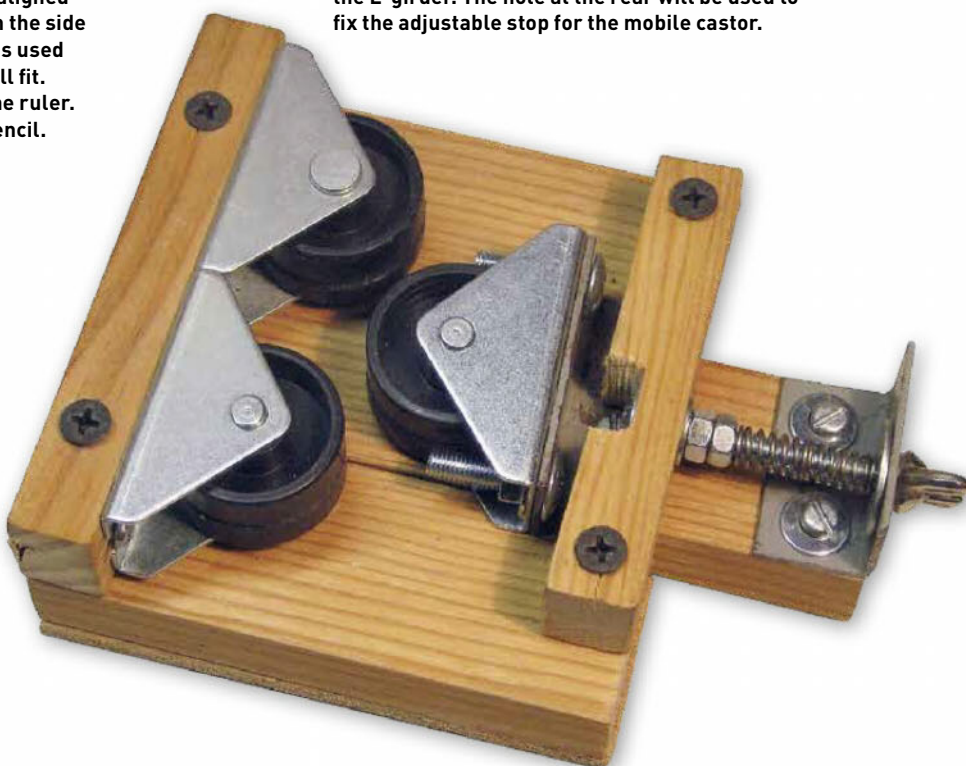


The third castor is fixed to a length of metal L-girder which must be screwed onto the mobile piece of lumber. The latter is aligned with the other two lengths of wood on the side of the fixed castors. The metal ruler is used to preserve a space where the rail will fit. The third castor is pressed against the ruler. The fixing holes are marked with a pencil.



One last piece of lumber, fixed to those on the sides and with a notch cut on its underside, fits over the L-girder. The hole at the rear will be used to fix the adjustable stop for the mobile castor.

The bending radius of the rail depends on the space between the mobile castor and the two other fixed ones. To adjust this space, I fitted a spring-loaded stop: a stove bolt and a spring are fixed between the strip and a length of L-girder by a wing nut. Turning this nut adjusts the gap between the castors. The spring keeps this gap constant during bending.







Discovery



A Kehl-bound train arriving in Leutesheim (km 8.5). Four-wheeler railcar and trailer N° 8, ex-bogie railcar N° T 11 demotorized, built by Orenstein & Koppel 1936. (14 August 1965, J.-L. Rochaix)

# The MEG

## A rural tramway in the 1960s

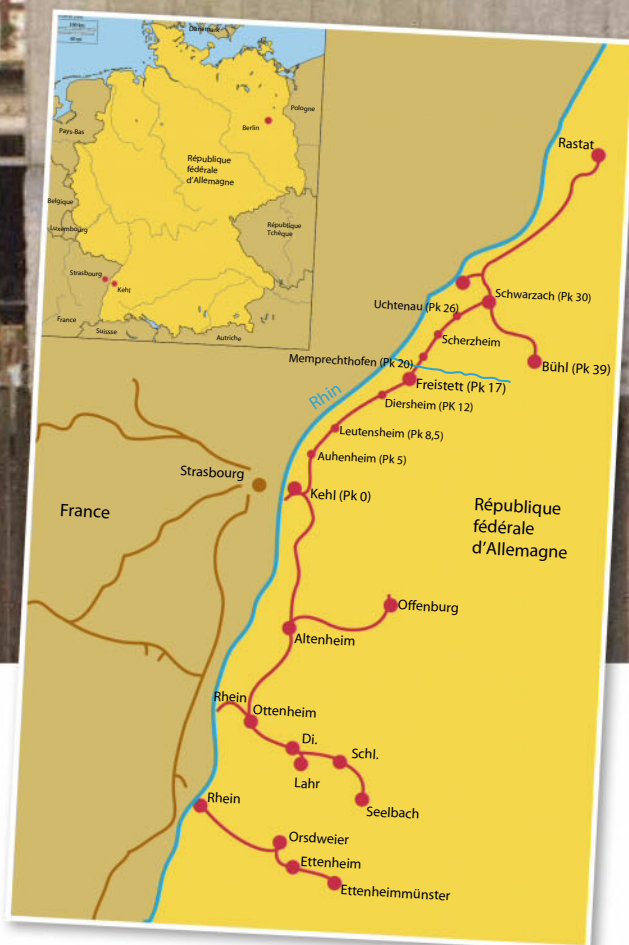
In the 1960s, Jean-Louis Rochaix and his wife Annette, together with their friends Michel Grandguillaume and his wife, visited and photographed the MEG network. Fifty years later, Jean-Louis, Annette and Michel bring it back to life for us. Enjoy your journey!

Text: **JEAN-LOUIS AND ANNETTE ROCHAIX**

Photos: **JEAN-LOUIS ROCHAIX,**  
**MICHEL GRANDGUILLAUME**

Once upon a time, between the Vosges and the Black Forest, there was an extensive meter gauge railway system. It was built in the late XIXth century by the SSG company (Strassburger Strassenbahn Gesellschaft), straddling the Rhine. Total length was almost 200km: 95.5km on the right bank of the river, in the Land of Baden, and 98.7km on the left bank, in Alsace. Both systems were connected by an imposing viaduct over the Rhine between Strasbourg and Kehl. ●●●





A Bühl-bound train in Schwarzbach station. (18 August 1965, M. Grandguillaume)

Graphics by E. Fresné.



A Kehl-bound train outside the Diersheim town hall (km 12). (14 August 1965, J.-L. Rochaix)





The small bridge at Rheinbischofsheim, on the Kehl side. (18 August 1965, M. Grandguillaume)



Four-wheeler railcar with trailer N° 8, at the level crossing between Leutesheim and Auenheim. (14 August 1965, J.-L. Rochaix)



Bogie railcar T 13 seen leaving Membrechtshofen (km 20) for Kehl. In the background, the large viaduct over the Rench river. (15 August 1965, J.-L. Rochaix)

## From one to two

After WWI, the railway was cut in two. Two new companies were created in 1923: in France, the CTS (Compagnie des Tramways de Strasbourg) took over from the SSG. Meanwhile, in Germany, a new company came into existence: the MEG (Mittelbadische Eisenbahn Gesellschaft).

As early as 1894, on the French side, the lines were gradually electrified in 1200 V DC, whereas on the German part of the system, there never were any overhead wires. Steam haulage was used, and from the 1930s, a set of railcars.

Despite opting for a modern type of motive power, the French network was the first to be closed. The farewell to Strasbourg trams took place on 1st May 1960, with 0-4-0 T steam locomotive (similar to N0 46) running ahead of the last train.

## A short reprieve

In Germany, the Kehl - Schwarzach - Bühl line was closed in 1968, whereas the Schwarzach branch, on the Rastatt line, which led to the NATO airfield in Söllingen as well as to the Dow Chemical GmbH plant in Greffern, was kept in service for goods traffic and partially converted to standard gauge during the summer of 1972. ■





Departing from  
Schwarzach (km  
30) for Kehl.  
(18 August 1965,  
M. Grandguillaume)

Kehl-bound T 13  
railcar seen in the  
street at Scherzheim  
(km 24). (15 August  
1965, J.-L. Rochaix)



A train arrives at Kehl - Turnhalle  
(km 2), the new terminus, headed by  
a railcar from the T1 - T8 series, built  
by Orenstein & Koppel 1934 - 1941.  
A connecting bus service to the Kehl  
town centre is waiting to depart. (18  
August 1965, M. Grandguillaume)







Bogie railcar N° T 12, arriving from Bühl in Schwarzach, the junction for the Rastatt branch. Diesel locomotive VT 22.01 can be seen behind the passengers. (17 August 1965, M. Grandguillaume)



A Kehl-bound railcar calls at Rheinbischofsheim (km 15). (14 August 1965, J.-L. Rochaix)



Hauling a loaded carrier truck, a railcar arrives in Lichtenau (km 26), bound for Kehl. (17 August 1965, M. Grandguillaume)





Stock awaits a railcar outside Freistett station (km 17), Ci 59 carriage built by the Compagnie des Tramways de Strasbourg 1914 and PW 14 van, built by MEG 1935. (14 August 1965, J.-L. Rochaix)

## Bibliography

Erhard BORN, *Schmalspur zwischen Vogesen und Schwarzwald* (ISBN 3-98000-0140-7). This book is of particular interest to modellers, as it features diagrams of all the MEG rolling stock.

A train of vans bound for Kehl seen in the street at Rheinbischofsheim. (18 August 1965, M. Grandguillaume)







Layout project



A typical building, semi-detached goods shed, rural scenery... highly atmospheric. Note the sluice gate in the foreground. T 13 bogie railcar calls at Moos (km 32), a town located close to the terminus at Bühl. (15 August 1965, J.-L. Rochaix)

# A shelf tramway

Discovering the fabulous MEG network could not leave us cold! Here is a tram layout project, designed around the sites we discovered with Jean-Louis Rochaix.

Text and illustration: **FRANÇOIS FONTANA**

Photographs: **COLLECTION**

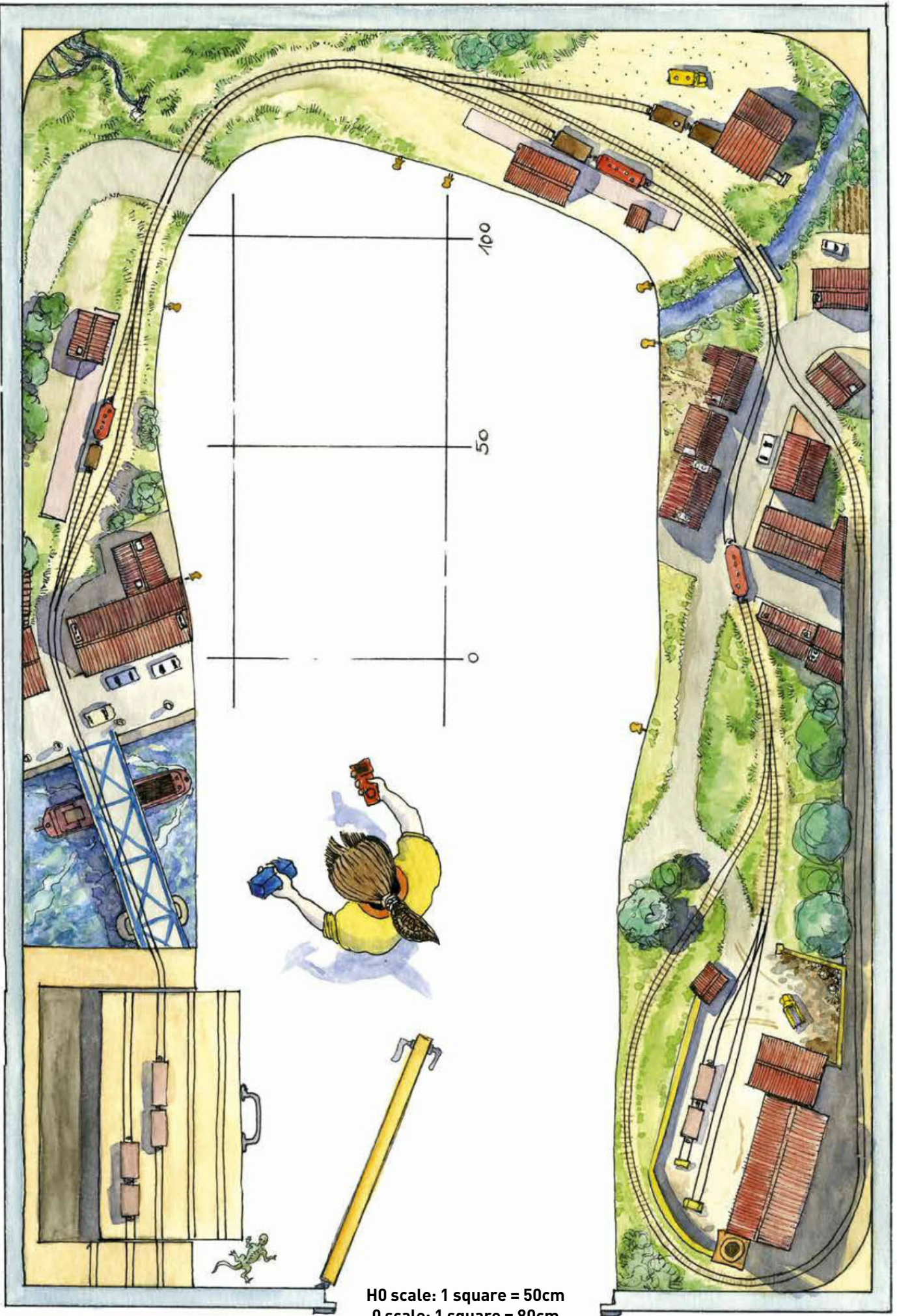
**JEAN-LOUIS ROCHAIX**

**A** rural tramway, without overhead wires, but with standard gauge transshipment, with private sidings, with junctions, with road-running through villages, with roadside stretches, with right-of-way stretches, and with the splendid Kehl bridge as the cherry on the cake! A dream comes true!

## The trackplan

The layout is designed as a simple fiddleyard to balloon loop arrangement. The loop is hidden behind a large brewery, while the return track to the junction point is completely concealed behind the houses in the village. Along its ●●●





H0 scale: 1 square = 50cm  
O scale: 1 square = 80cm

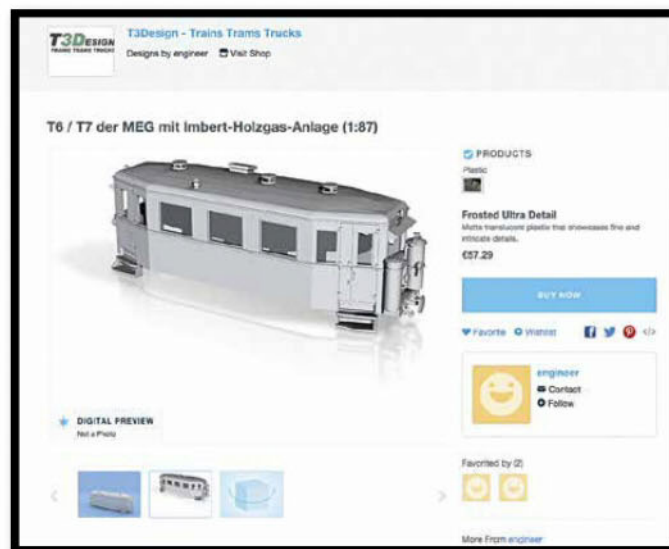


●●● route, the line serves two stations: one features a simple loop track where trains can pass. The other, more substantial, boasts a goods shed, providing justification for some wagon movements. At one end of the layout, I decided to model the imposing Kehl bridge. Such a splendid piece of civil engineering is a must-have!

## Stock

Narrow gauge, meter gauge? The choice is yours. The small four-wheeler railcars that used to run on the line exist in 1/87 scale in the Shapeways range. They were designed by a gifted modeller, and can be built with or without the producer gas system. For the four-wheeler carriages, Bemo or Liliput have suitable models with four windows per side in their ranges. The same brands offer a complete range of goods wagons. You will have to design the bogie railcars.

If you opt for 1/43.5 scale, you will have to scratchbuild the motive power. The goods wagons can be found in the



The Shapeways page that displays a small producer gas railcar.

Bemo 0m range. And if you choose 016.5, there will be no alternative to digging around for old Fleischmann Magic Train de Fleischmann references.

## Technique

This is typically the style of layout that calls for digital control to manage the small number of motive power items

and the balloon loop. The simple infrastructure and the fairly flat scenery leave plenty of choice when it comes to benchwork. But a lightweight approach or even simple sheets of extruded polystyrene will be amply sufficient. Given the way in which such lines used to be operated, I decided to work the turnouts via a wire-in-tube system. ■



The Kehl bridge over the Rhine, an ideal transition towards the fiddleyard. (Jean-Louis Rochaix collection)





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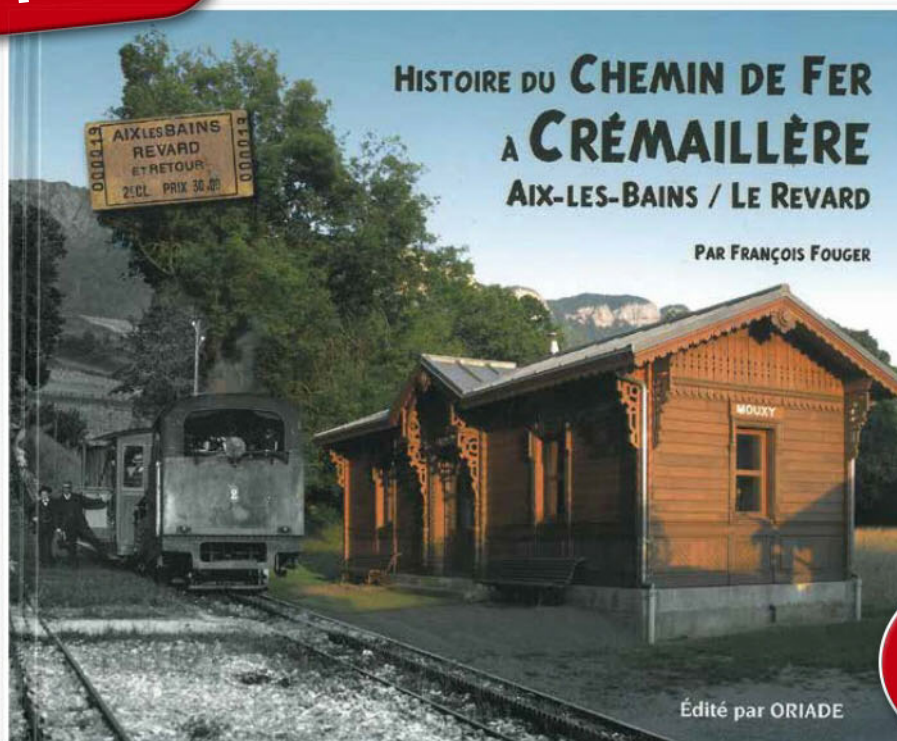
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## LIGNES & COMPAGNIES



Les locomotives  
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Les chemins de fer  
en Alsace-Moselle  
pendant la Seconde  
Guerre Mondiale



Atlas du réseau  
ferré en France



Le Francilien,  
le train de demain  
signé Bombardier



Les chemins  
de fer industriels



Les Michelines



Les CF de l'Eure au  
début du XXe siècle



Les chemins de fer de  
la Seine-Maritime  
au début du XXe siècle



Les chemins de fer de  
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département du Nord  
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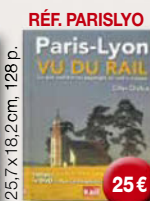
Les 400 profils de  
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Volume 1.



Les 400 profils de  
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Paris-Marseille  
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Paris-Lyon  
vu du rail



Le réseau Breton  
La ligne Carhaix-  
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L'arrivée  
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en Bretagne Nord

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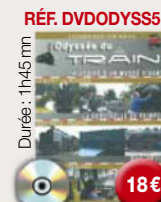
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Trains de légende  
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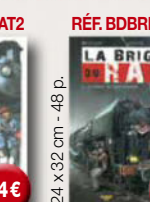
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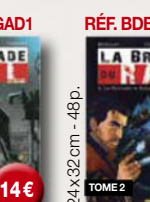
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du rail



BD - Combattants  
du rail



BD - La Brigade  
du rail



La brigade du rail

## COLLECTION



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les plus beaux trains-  
jouets de France.



Jouef  
L'intégrale



Boom, vroom, zoom  
toutes les motos françaises  
en tôle. 1900-1975



Histoire des voiliers-  
jouets en France.  
1863 à 2009



VOGU'ENMER  
& les voiliers  
Guérandaïs



Maquettes du ciel,  
Musée Air France



Les Objets  
du Train



Les Dinky Toys série  
24. 1949-1959, la  
décennie prodigieuse

## TRAMWAYS, METROS, BUS



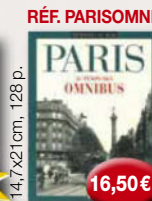
Angers,  
une histoire  
de tramways



Dijon, de trams  
en bus, du bus  
au tram



Le dernier tramway  
à vapeur de France.



Paris au temps  
des omnibus



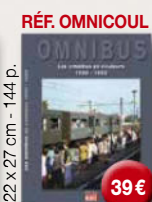
Milan en Tram



Les tramways  
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Corrèze. 1912-1913...  
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couleurs 1950-1985



Lyon en tram au temps  
de l'OTL (1880-1958)



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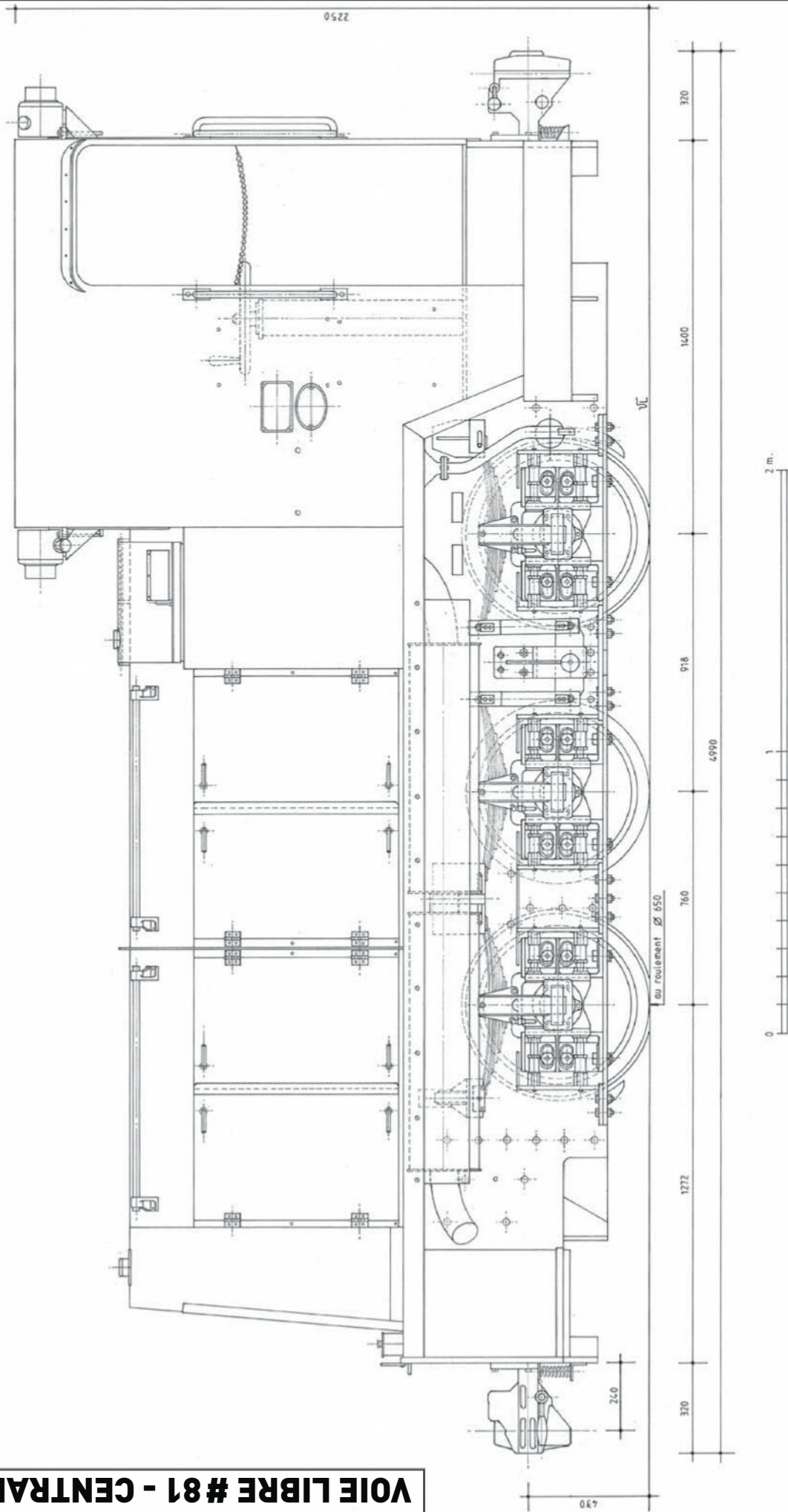
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# Billard T 100 D type locotractor

Drawing Vincent Lepais, 1/10 scale



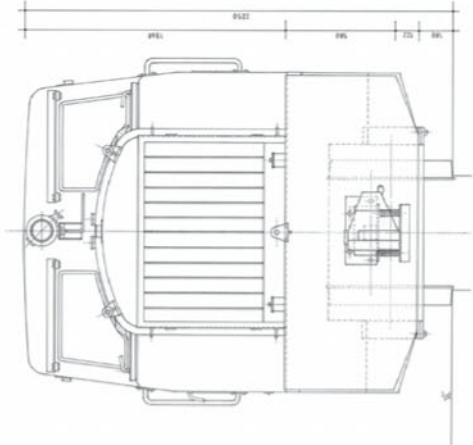
LEFT-HAND ELEVATION



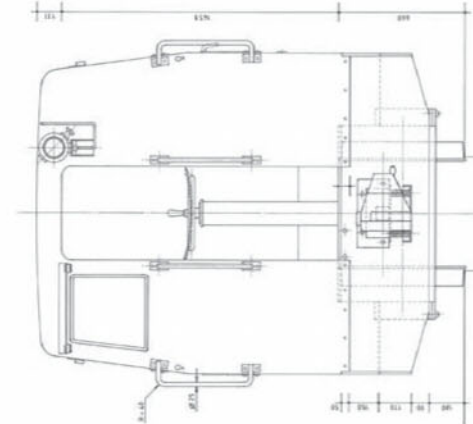
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FRONT VIEW

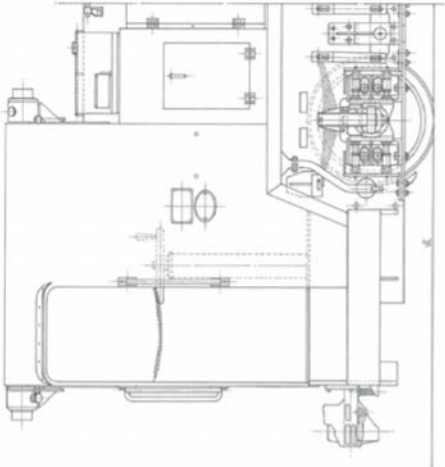


REAR VIEW



# Pinguely 0-6-0 T, type 245

Elie Mandrillon collection, scale 1/43,5



PARTIAL RIGHT-HAND ELEVATION

