

CONSTRUCTION: BILLARD A80D, NISSEN HUT, LIFTING BRIDGE

Voie Libre

Voie Libre

#107

THE MAGAZINE OF RAILWAY CREATORS

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October, November, December 2021

Editorial #107

VOIE LIBRE: TO BE ENJOYED WITHOUT RESTRICTIONS!

It is high time for us to get together again. Having created in our individual workshops, far from other modellers, real little gems – the following pages provide ample proof – the time has come for live gatherings and exchanges. We will be attending the forthcoming shows, so we look forward to meeting you there.

As is customary, this autumn issue is dedicated to bashing, to construction, to

making things. We see it as a compendium of tricks of the trade, a book of recipes, a source of inspiration. And to give you more – ever more! – enjoyment, we have decided to beef up the magazine: the issue of *Voie Libre* you are holding has a larger number of pages. And this will be the case henceforth.

Good reading and happy modelling!

François Fontana

→ Follow us on Keep in touch all the year round with **Voie Libre** on blog.voielibre.com

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of fun!

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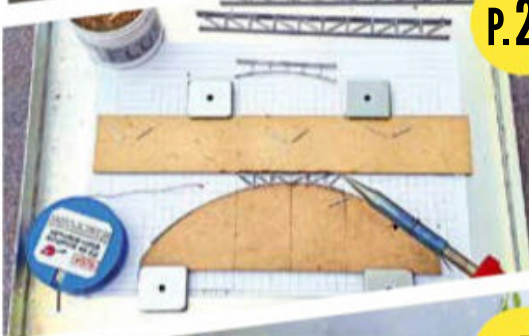
Central folder
KP4/C2

In pictures

P.20



P.28



P.72



MINITRAINS : A SLEW OF NEW RELEASES

A SCHÖMA DIESEL TRACTOR



Contemporary train lovers, MinitrainS has something for you! The new releases at the end of this year are perfectly contemporary. The Schöma (Christoph Schöttler Maschinenfabrik) diesel tractor reproduces the prototypes that run at the Freilismuseum in Salzburg in Austria and in the oil fields of Rühlermoor in Germany. The first version boasts the bright red livery with yellow lining of the trains that serve the large eco-museum park in Salzburg. The second, the white livery found in the oilfields of Lower Saxony. A third version, in green livery, will allow modellers who like more discrete locomotives to use this modern-looking little machine on their own layouts. The model, entirely made in Karlsruhe, Germany, is fitted with the MinitrainS universal driving mechanism, a vertical motor located in the cab and featuring a flywheel. A large block of machined metal, located under the bonnet, ensures excellent

adhesion and plenty of haulage power: on my test circuit with 22.5cm radius curves and on the level, it hauled a 52-axle train before showing the first signs of slippage. The body and chassis are injected in process-coloured plastic, while various detailing parts are added on: handrails, grab irons, exhaust pipe, roof.

François Fontana



MINITRAINS
AVAILABLE FROM THE LR MODÉLISME
SHOP <www.trains.lrpresse.com>
REF. MT2080 (WHITE), MT2081 (RED),
MT2082 (GREEN)
PRICE: 144.90€

WATER TANK WAGONS



Water tanks wagons are indeed what is hauled by the small Schöma tractors across the unstable peat bogs, to the oil pumps of Lower Saxony. Such is the reason for this small industrial railway: the bad quality of the soil means that nothing can run there except trains, whose weight is distributed by the rails, or road machines fitted with colossal

tracks. The water used for cooling the pumps is carried in huge tank wagons, all of which bear large plates with a number. These plates are not reproduced on the MinitrainS model but give the train an incredible appearance. The model is also missing a filler cap and the drainage valve. A bit of homework ahead...

François Fontana

MINITRAINS
AVAILABLE FROM THE LR MODÉLISME SHOP <www.trains.lrpresse.com>
REF. MT3020
PRICE: 24.90€

MODERN 4-WHEELER TOASTRACK CARRIAGES



These small open carriages carry the visitors to the Freilismuseum in Salzburg, Austria. Featuring a generous loading gauge, they are built out of metal strips with a wooden plank infill. The seats are arranged parallel to the track along the outer sides. The model is a good reproduction of the prototype's general appearance, as well as of the colours of the various sub-assemblies that are assorted to the livery of the Schöma locomotive. Because of the short wheelbase and the overhang, this new production is fitted with mobile couplers, to improve running through curves. These couplings are fitted with a spring fixed under the chassis, to ensure centering. Tested between two heavy and particularly rigid wagons, the small carriage ran through curves perfectly. One last thing: the steps are very low and are close to fouling the loading gauge, so make sure the trackside is clear of vegetation!

François Fontana

MINITRAINS
REF. 3090
PRICE: 22.90€

H0-9

LILIPUT BY BACHMANN : BOGIE CARRIAGES

We are dealing here with a new series, but with different colours. Bachmann Europe has re-issued the very attractive Austro-Hungarian bogie carriages previously produced by Liliput. Finely engraved, they are stunning in their fir-green livery with sharp gold lining, wood-coloured window frames, black chassis and end panels, and grey roof. Inside furnishings have been added, with wooden seats and a partition for the WC compartment. The end panels now feature fine little grilles on the gangway doors. For the British market, the class markings are in English and in gold colour, and a figure 5 is displayed on the body sides. The Archbar type bogies remain the same, and are fitted with 7mm diameter wheels, but the coupling heads are the Bachmann model, which imitate a link-and-pin system. With a generous loading gauge, the same as that of the REE CFD wagons, they look great behind the large 0-6-2 T Liliput locomotives or the Roco 0-8-2 T engines.

François Fontana



H0-9

LILIPUT BY BACHMANN
REF. 394-002
PRICE OBSERVED: 45€

What's New

BEMO : FO ELECTRIC MOTOR UNIT ABDEH 2/4 43



Born as ABDeh 2/4 41 to 45 in 1941 and 1942, these bogie electric motor units (with one driving bogie) mainly ran on the Schöllenen line (Andermatt-Göschenen) of the Furka-Oberalp company. In the 1970s, they were coupled to carriages ABt 4191 to 4195, and their first class compartment was converted to second class, the units becoming BDeh 2/4. The two motors had a power of 426 kW, and the units could travel at a maximum speed of 30 km/h on the rack sections and 50 on the adhesion sections. Offering 8 first class seats and 32 in second class, they could haul only one carriage on the 179 ‰ gradient of their favourite line, and two carriages on the 110 ‰ gradients of the FO network. Following various tests with a new livery, they were all repainted in red with a white line in the 1980s. They ran until the early 2000s. The model is an accurate reproduction and the original dark red FO (dunkelrot) is pleasing. Running qualities

are excellent. The three white lamp reversible lighting could have been more complete, the red lights are missing as well as the typically Swiss system of three front lights and one at the rear on the right-hand side. The inside furnishings are also somewhat basic, the space being taken up by the driving mechanism and electronic board, but there is lighting. Unlike the prototype, the model features two driving bogies, each fitted with a cog for the rack. The detailing parts were already fitted and glued in place on my model... You will just need to glue the driving mirrors, the sandboxes (provided the curves on your layout are not too sharp) and two pipes under the body.

Jacques Royan

BEMO

REF. 1347 213 RED LIVERY

PRICE OBSERVED: 395 TO 415 €

DIGIATL VERSION (ESU NEXT 18)

WITHOUT SOUND

HALLING MODELLE : A ROMAN TRAMWAY

Six-window motor units with enclosed balconies and their specific trailers, typical of the Roman tramway network, are now available for our layouts. The prototypes ordered prior to WWI were delivered between 1911 and 1924. Halling has reproduced two tramways and two carriages with specific numbers. The models are made of injected plastic, while the motor units are designed to be fitted with a universal driving mechanism selected according to the gauge used on your layout. Halling recommends using its magnetic couplings, reproducing real link and pin couplings, to couple the motor unit and its trailer. The motor unit features a bow collector.

François Fontana

HALLING MODELLE

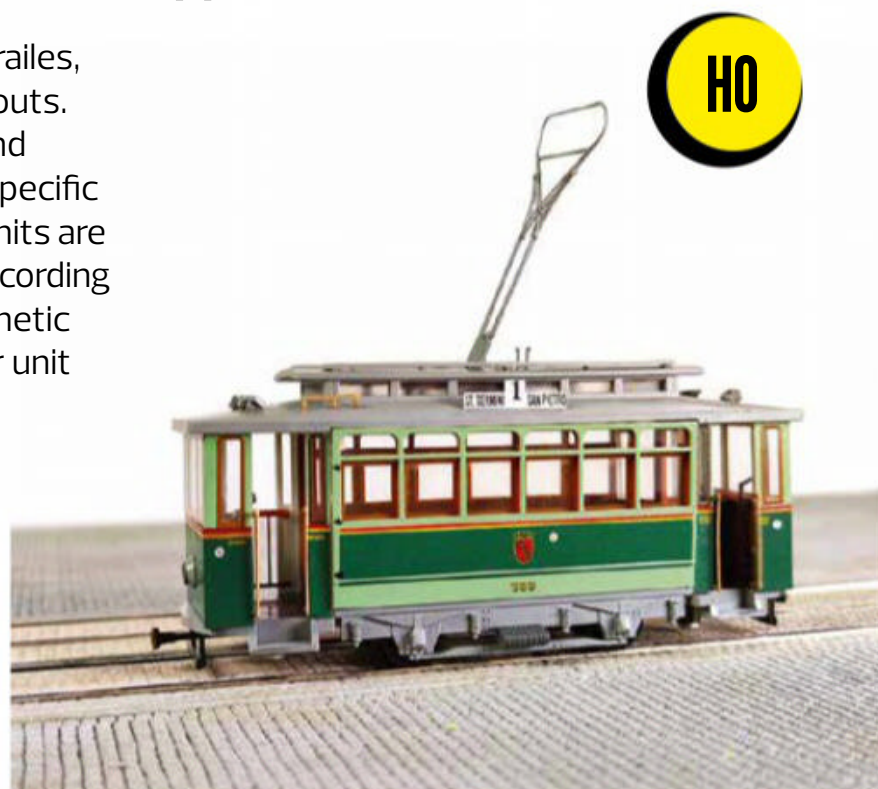
www.halling.at

MOTOR UNITS REF. ROM-313-M AND ROM-369-M

PRICE: 145€ (WITHOUT DRIVING MECHANISM),
179€ (WITH DRIVING MECHANISM)

TRAILERS REF. ROM-216-B AND ROM-274-B

PRICE: 135€



BACHMANN : ADORABLE QUARRY HUNSLETS!

00-9



Having first been announced in January 2018, Bachmann Europe finally plans to release its "Quarry Hunslet" 0-4-0 STs in the course of 2022. The first undecorated prototypes were displayed to the press and then to the public last August. The additional time taken was used to produce models that should be exceptional. On the mechanical side, a small coreless motor fitted with a flywheel, completely concealed inside the boiler, will drive an all-metal chassis. The locomotives will feature a 6 pin DCC connector to allow for the installation of a

micro-decoder. In 1/76 scale, the engine is no larger than a 9 V battery, so this is quite an achievement! On the superstructure side, Bachmann ruled out reproducing a generic locomotive. The manufacturer has opted to produce four highly accurate reproductions of four preserved engines, all of which will reach the market simultaneously. As the models should be quite affordable, it looks as if many of us will have to start working on a Welsh quarry layout project...

Eric Fresné

BACHMANN

QUARRY HUNSLET

REF. 391-050 À 391-053

PRICE ANNOUNCED:

- OPEN VERSIONS:

134.95 £ (CA. 158€)

- CAB VERSIONS:

144.95£ (CA. 168€)



ROCO : SMALL BOGIE WAGONS



ROCO

OPEN WAGON REF. 34620

PRICE OBSERVED: 39.90€

Roco has re-issued, in its H0-9 range, the bodies of Rügen island goods wagons fitted with bogies. These models are far from being new, but they are now available again from retailers. The injected plastic bodies are well made, brown for the superstructures and black for the chassis, and are fitted with the small truck bogies which must be almost 60 years old! The markings are as sharp as the relief detail. Running qualities are excellent, the small metal axles with insulated wheels are as good as ever. A piano wire hook acts as a discreet and standard coupling. The range comprises an open wagon, a box van with sliding door in 3 liveries, and a four-window passenger carriage with end balconies.

François Fontana



PECO/KATO : PRINCE AND PRINCESS



The result of a cooperation undertaken in 2020 between the British firm Peco and the Japanese firm Kato, models of the 0-4-0 ST tender engines of the Ffestiniog Railway are announced for January 2022. With these locomotives, the prehistory of narrow gauge will become available as the prototypes were delivered by George England and Co from 1863! However, the scale model will be ultra-modern. Kato has designed an all-metal chassis, driven by a coreless motor fitted with a flywheel. Electrical pick-up will be via the wheels of the locomotive and of the tender, and a DCC socket will be pre-fitted.

The locomotive is designed to run through 217mm radius curves. The injected plastic superstructure will feature many add-on detailing parts, some of which will require fitting by the buyer. The NEM pockets will accommodate either Peco loops or Rapido hooks. These highly original locomotives will be perfect for hauling the Ffestiniog carriages and wagons already available in Peco's Great Little Trains range. They will be distributed by Peco in continental Europe and the U.K. and by Kato in North America and Asia.

Eric Fresné



PECO/KATO

PRINCE REF. 512-201-B

PRINCESS REF. 51-201-A

PRICE ANNOUNCED: 150€ (CA. 175€)



SCENERY



AB-MODELL : CHALETS

AB-Modell, whose splendid reproductions of Swiss metre gauge trains in N scale are regularly reviewed here, has produced some typical chalets to bring life to the scenery. Two different surfaces and two models of each produce four different buildings. The large ones: Alpenblick and Alpenrose (71 x 50 x 57mm), and the small ones: Bergkristall and Bergsee (60 x 55 x 56 mm). All consist of a great many high density card and wood parts. The inside partitions are included as well as many outside details.

François Fontana

AB-MODELL

<www.n-schmalspur.de>

PRICE: FROM 49.75 TO 55.80€



Livre

BILLARD AUTORAILS DU MAQUIS

Lets' hop onto a CFD Billard railcar, and escape into the maquis! This excellent and very comprehensive study of the Billard railcars having run in Corsica takes us due south. There is plenty to watch, read and learn! The collective of authors who worked on this joint project has drawn on all possible sources, both for the study and the pictures illustrating it: family and professional memories, testimonials, archives from the railway and the department of Corsica, builder's archives, press... All these «small papers», as the authors call them, help to describe a lengthy career. The book comprises 7 chapters, describing the activities of the CFD company, of the Billard company, how they cooperated, the technical studies, the railcars' long career and their preservation. This work reminds us that for 75 years, these brave machines played an important part on the Corsican railway. Fans of machinery will find a wealth of technical detail supported by drawings and plans. Those who enjoy anecdotes will not be forgotten either, while historians will be delighted by an in-depth look at over seven decades of history. And all secondary railway enthusiasts will be thrilled by the fine illustrations (over 200 photos), well emphasized in a clear page layout. I am off, see you in the maquis!

François Fontana

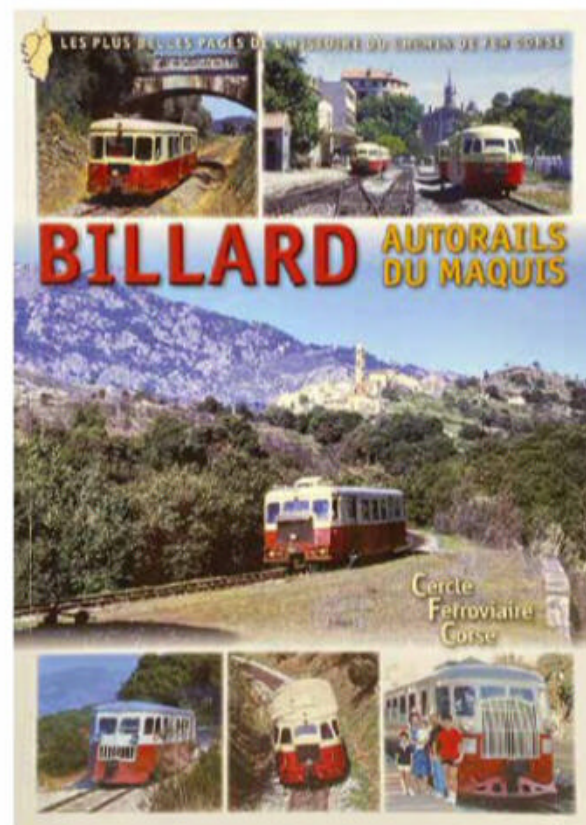
BILLARD AUTORAILS DU MAQUIS COLLECTIVE

CERCLE FERROVIAIRE CORSE

114 PAGE, SOFTBOUND

<cercle-ferroviaire-corse@orange.fr>

PRICE: 19.90€



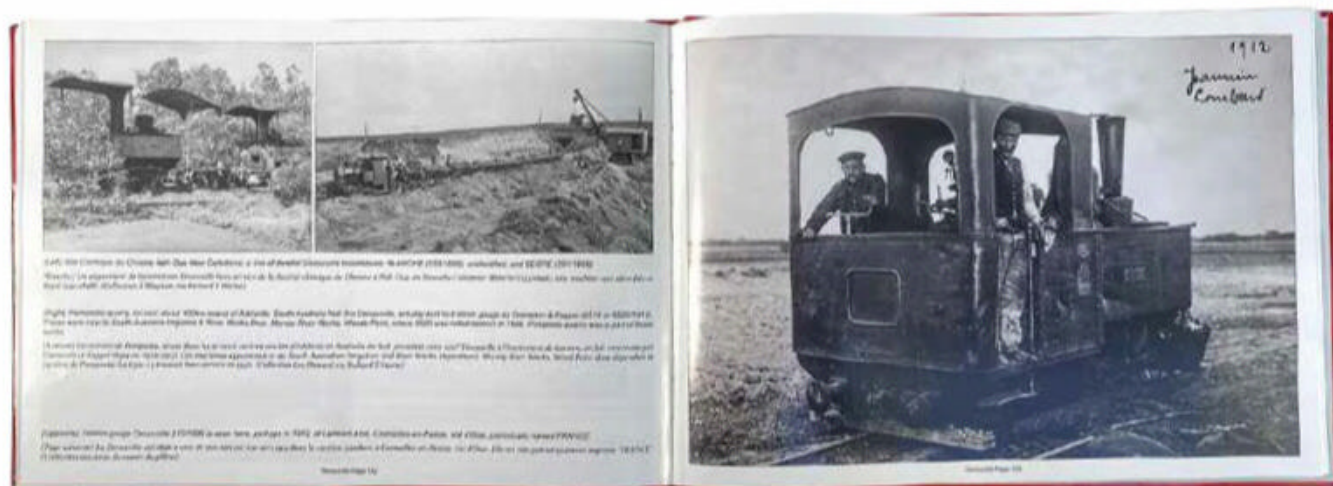
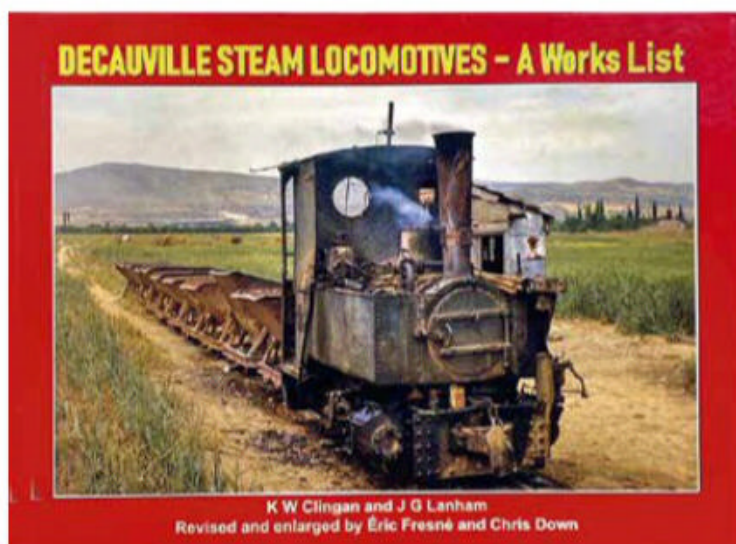
Book

DECAUVILLE STEAM LOCOMOTIVES – A WORKS LIST

KW Clingan and JG Lanham have dedicated years of patient research to compiling sources, inventories, photographs... to draw up a numerical list of narrow gauge locomotives produced by Decauville. All that was missing was the contribution of the new team, Chris Down and Éric Fresné, who have added to the extensive list an in-depth study of the Decauville company and of its descendents, the economic and technical reasons, the various types of productions and the international cooperation. Very appropriately, the book is published in two languages: English and French. The illustrations, essentially in black and white, are almost entirely from Eric Fresné's documentation. They include pages from the catalogues, a few engravings, some photos including a few that, to me, were completely unknown and – last but not least – the complete song: “*En chemin de fer Decauville*” (“On the Decauville railway”)! The 60 pages of the numerical list tell us when the locomotives were built, by whom they were ordered, where they were shipped and how they were named.

François Fontana

**INDUSTRIAL RAILWAY SOCIETY
DECAUVILLE STEAM LOCOMOTIVES – A WORKS LIST
ITALIAN FORMAT, 156 PAGES.
PRICE: 40€ FROM THE LR PRESSE SHOP**

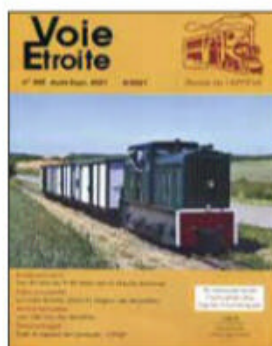
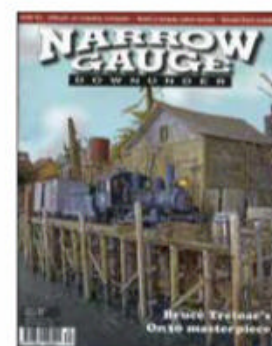
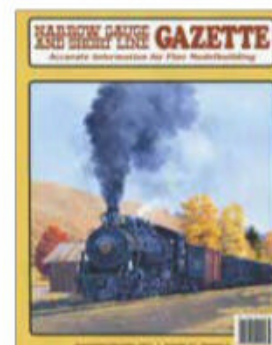
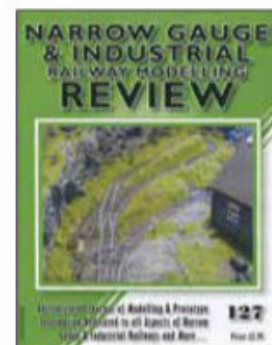


SCENERY

TRAMFABRIEK : A DETAILING SET FOR THE CITROËN HY VAN



PRESS REVIEW



Many of us have fallen for the Citroën HY van produced in large quantities by Busch in the 90s. The model is fully in line with scale items of that period, well proportioned but lacking somewhat in finer detail, so not quite up to date any more! Tramfabriek has produced a small etched nickel sheet comprising registration plates, guard plates on the wheel arches, headlight strapping, windscreen wipers, and above all driving mirrors and a fine radiator grille. Once these parts are glued in place, our good old HY is quite transformed!

François Fontana

TRAMFABRIEK

<www.tramfabriek.nl>

PRICE: 6€ + POSTAGE

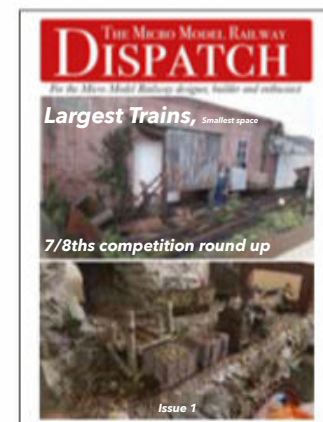
Issue 127 of the **Narrow Gauge & Industrial Railway Modelling Review** contains a dossier on how to model narrow gauge with three articles dealing respectively with Stub turnouts, making portable track and track scenics, with six pages of prototype examples. The **Narrow Gauge & Short Line Gazette** dedicates its historical part in the last two issues to two forestry railways on the West coast of the United States. An opportunity to see Shay and Heisler engines in their natural environment and even travelling on a cableway! And for good measure, **Narrow Gauge Downunder** n° 82 takes you on a journey to a Mecca of "logging railroads" preservation, in Felton, California. In issue 305, **Voie Étroite** takes a closer look at the celebration of the 50th anniversary of the P'Tit Train de la Haute-Somme. You can admire their sugar consist comprising a COFERNA diesel tractor and two ex-American Expeditionary Forces boxvans, neatly repainted. Our German counterpart **Schmale Spuren** features a large article about a Fremo H0e gathering: how to enjoy our hobby in a fun-packed atmosphere! Under José Banaudo's signature, **Transports & Patrimoine Ferroviaire** n° 407 dedicates a full dossier to the 1910 strikes on the Chemins de Fer du Sud de la France. A very enlightening text and some fine illustrations.

The Editorial Team

Internet

MICRO MODEL RAILWAY DISPATCH

Ilan Holmes has resurrected Carl Arendt's publications, with a new look, a new way of approaching the topic. This first publication brings together 11 articles dealing with micro-layouts, more or less detailed and explained over 33 pages. Good sources of inspiration! The Dispatch is distributed via email, simply register with Ian by sending him a message at the specific address <MMRDeditor@gmail.com>.



GATHERINGS

Shows and railway modelling swapmeets are resuming, an opportunity for all getting together again and exchanging ideas. We will be in:

CHAMBÉRY, SAVOIE MODÉLISME ON 30TH AND 31ST OCTOBER.



DREUX, RAILEXPO FROM 26TH TO 28TH NOVEMBER.



See you soon!



The locomotive and its delightful tank wagon.

NEKOYA LINE BY TOMYTEC

Sunrise in the East

The Japanese manufacturer Tomytec produces, in 1/80 scale, a narrow gauge railway range called Nekoya Line. A fictitious company strongly inspired by the real thing.

Text and illustrations: François Fontana

THE MODELS AT A GLANCE

Manufacturer: Tomytec

Scale: 1/80

Gauge: 9 mm

Motor: coreless

Transmission: worm gear
and gear cascade

Control: analogue, DC

The post delivered a fine box containing the locomotive, a bogie tank wagon and a length of track. Tomytec's latest narrow gauge reference.

SIMPLE AND WELL DESIGNED

On the box, a cartouche indicates the scale and the track gauge, another reminds buyers that a driving chassis is required as well as metal axles with insulated wheels. Inside the box is a 4-wheeler electric locomotive

with a pantograph, fitted to a non-motorized chassis with injected plastic axles. The driving chassis (ref. TM-TR07) replaces the plastic chassis supplied, it features strips of ballast.

The tank wagon is fitted with Archbar type bogies with plastic axles, which can be replaced by those in set TT-03R, to be ordered separately. A length of injected plastic track, for displaying the engine, is included in the box. The box costs ca. 50 euros, the driving chassis ca. 20 euros. The



The complete set.



The engine, completely dismantled.

total cost is therefore around 70 euros, to be paid to whichever online shop you deal with. I had no extra customs duties to pay, as they were included in the total price. The prices I quote here are approximate, they vary very quickly by some 10 euros on the Japanese sites!

A FINE ASSEMBLY

The engine, supplied assembled, consists of 16 process-coloured injected plastic parts. All of them click together, making the model very easy to dismantle, a blessing for modellers wanting to change the colour or add a few details. The pantograph, very accurately reproduced, is fixed onto the roof via the four insulators. The blue body has white lining, and displays printed

numbers and logos. Japanese models are supplied with an N scale coupling, or a link and pin tramway type coupling.

Fitting a loop coupling is therefore required, I use Peco injected plastic references or Tramfabriek etched brass models. The tank wagon is designed in the same manner. It bears an attractive logo and a cartouche in Japanese which I have kept as it adds an exotic touch to my layout! I did not feel the need to replace the axles of this wagon, as they work perfectly.

THE DRIVING CHASSIS

The Kato universal driving chassis reference TM-TR07 is fitted with a coreless motor. It starts easily, runs slowly and its haulage power is quite incredible. It took a

40-axle train to reach the adhesion limit of this mechanism, on the level!

AN EXTRAORDINARY BASE

The models in the Tomytec Nekoya Line range are simple, the shapes accurately modelled, the volumes neatly reproduced. There are no fine details, but the driving mechanisms are sound. Their affordable cost provides potential for a wide range of modifications and for the addition of all types of detailing.

The range includes two types of diesel tractors, an O&K 0-4-0 T steam locomotive, two railcars, an electric unit, three passenger carriages, various wagons and a delightful snow-plough. Super bases for your own bashing!

THE NEKOYA LINES

In Japan, the main lines built in 1067mm gauge are modelled in 1/80 scale on 12 or 13mm gauge track. The standard gauge Shinkansen lines are modelled on 16.5mm gauge track. There are also many local railways, known as Keiben Tetsudo, the Shirin Tetsudo forestry lines and the national lines on Hokkaido Kan-i Kido, built in 762mm gauge and modelled in 1/87 scale on 9mm gauge track or more accurately in 1/80 scale on 9mm gauge, this is Tomytec's choice. As for the Nekoya Lines, they are fictitious, but capture the atmosphere of all the 762mm gauge Japanese railways.

Text: **Nobuo Koizumi**

The driving chassis.





Bought off-the-shelf by the L&BR, Lyn has a very unusual appearance, fairly typical of Baldwin's "colonial" models.

LYN HELJAN'S ATTRACTIVE AMERICAN LADY

With this second type of locomotive, following on from the Maning-Wardle 2-6-2 T engines, Heljan has succeeded in producing all the steam motive power of the Lynton & Barnstaple Railway. Éric Fresné has fallen for this Baldwin 2-4-2 T...

Text and illustrations: Éric Fresné

THE MODEL AT A GLANCE

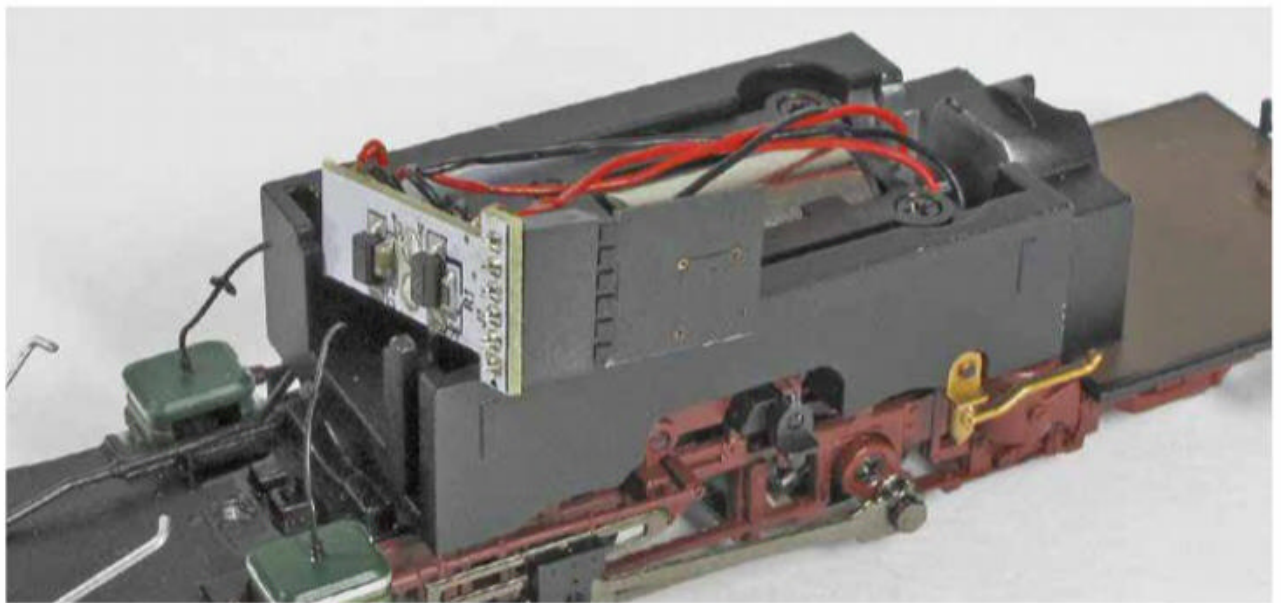
Manufacturer: Heljan
Scale: 00 (1/76)
Gauge: 9mm
Motor: coreless
Transmission: worm gear and straight gear tower on both driving axles
Supply: analogue, DC
DCC: pre-fitted with a socket for a 6-pin decoder
References: 9980 to 9985 (depending on period and livery)
Periods: I, II and VI
Price: 239.95 £ (ca. 280€)

With its tricolour livery and yellow lining, the engine is very natty!





The engine is supplied with two metal cow-catchers, to be fitted by the buyer. The housing for the coupler is a tad too tight, which hampers its movement slightly.



Lyn is pre-fitted for a 6-pin micro DCC decoder, which simply slots into place when the "lid" is removed from the socket connected to the electronic board located in front of the motor.

Built in 1898 by Baldwin, Lyn is a complementary 2-4-2 T ordered to assist the 3 Manning-Wardle engines supplied to the Lynton & Barnstaple Railway in 1896. Prototypically, Heljan decided to produce this model after the 2-6-2 T locomotives.

AN IMPRESSIVE APPEARANCE!

Straight out of the box, the engine is perfectly prototypical. The volumes are properly reflected. And they are somewhat impressive for a 60cm gauge locomotive: 94mm long in 1/76 scale! The model is suitably detailed, with many add-on parts, perfectly fitted except the funnel which required a small drop of glue to remain truly vertical... The only parts that need to be fitted by the buyer are the metal cow-catchers. Once in place, they leave just enough space for the standard Peco 00-9 couplers. The very simple motion is complete.

The liveries are perfectly neat. The shades are sharply separated and the lining is very fine. Besides the 5 "Lynton" versions, each corresponding to a given operating period, Heljan smartly opted to also supply Lyn in a fully black livery. This means the locomotive can belong to any imaginary railway company...

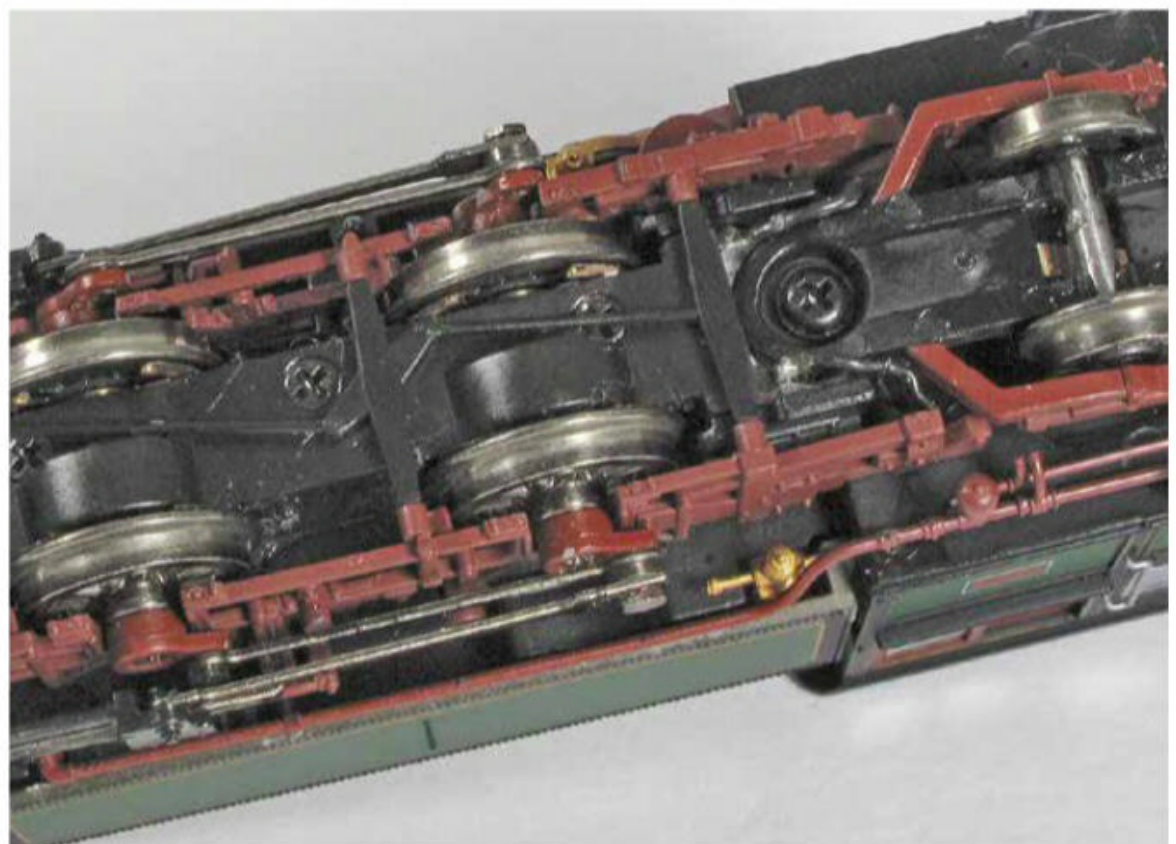
PERFORMANCE

Ensuring perfect running qualities on a narrow gauge locomotive with large diameter driving wheels (11mm!) and a particularly long rigid wheelbase looked like something of a challenge. Heljan has met it

with flying colours. The engine can indeed run smoothly through 305mm radius curves, as announced by the manufacturer. Better still, this elegant American lady can even handle the Peco Setrack curves, provided the track is meticulously laid. Once properly run in, my locomotive started under 1.5V. Movement is smooth and slow running is regular. A scale speed of 20kp/h is reached around 5.5V. There is ample hauling power to handle a string of Peco Lynton carriages.

DISMANTLING AND DCC

The Heljan 2-4-2 T engines are fitted with a six-socket connector to accommodate a 6 pin micro-DCC decoder. The instructions are very clear when it comes to dismantling. The decoder fits into a recessed space within the ballast. It's a tight fit, but it works. I did not test the engine's performance in digital mode.

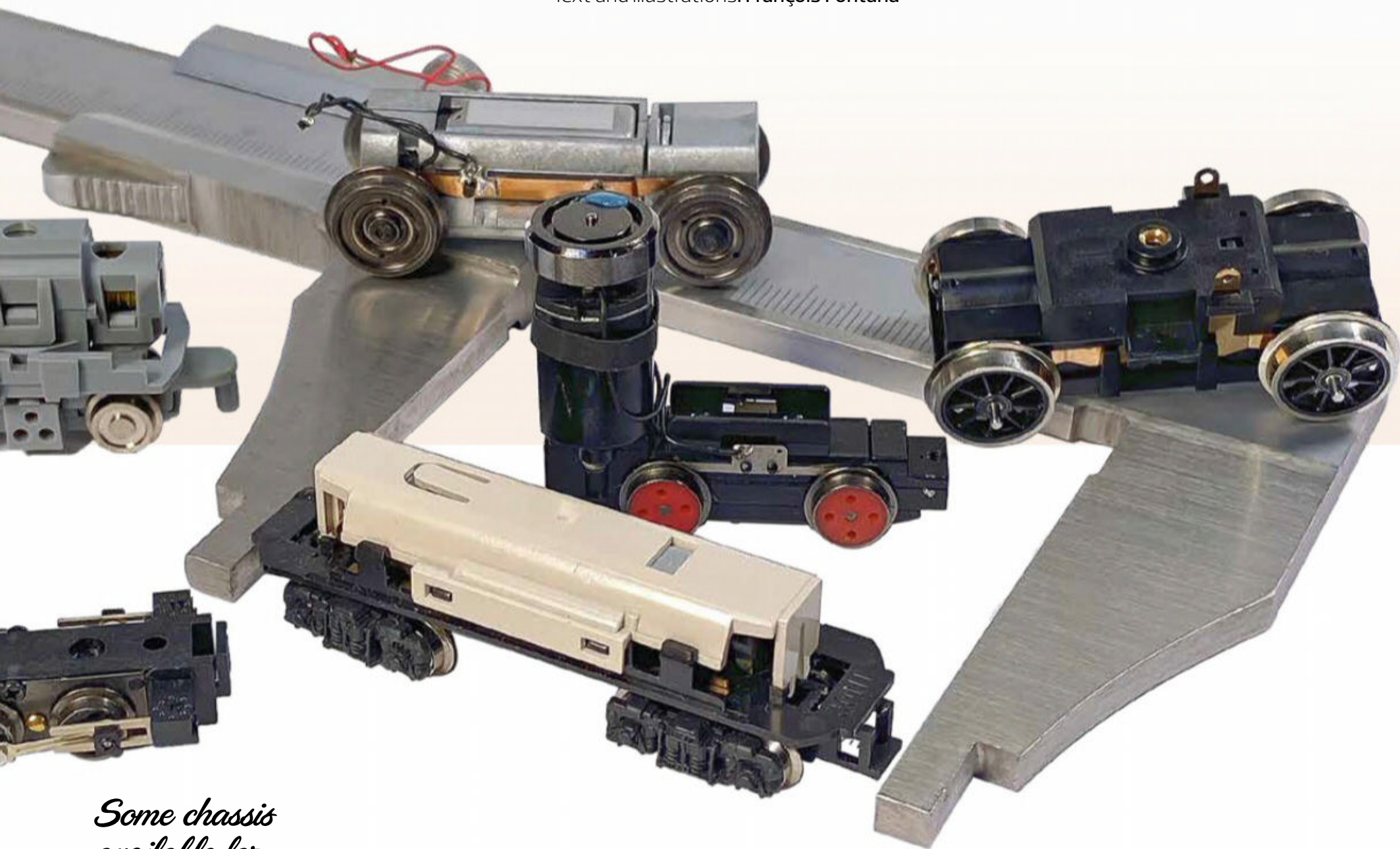


Each driving wheel is driven by a straight gear whose housing is visible under the chassis. Also note the additional electrical pickup on the rear pony truck.

Driving mechanisms FOR THE MODELLER

For those modellers keen on building motive power for 9, 12 and 16.5mm gauge, *Voie Libre* takes a panoramic look at the driving mechanisms available from various manufacturers.

Text and illustrations: François Fontana



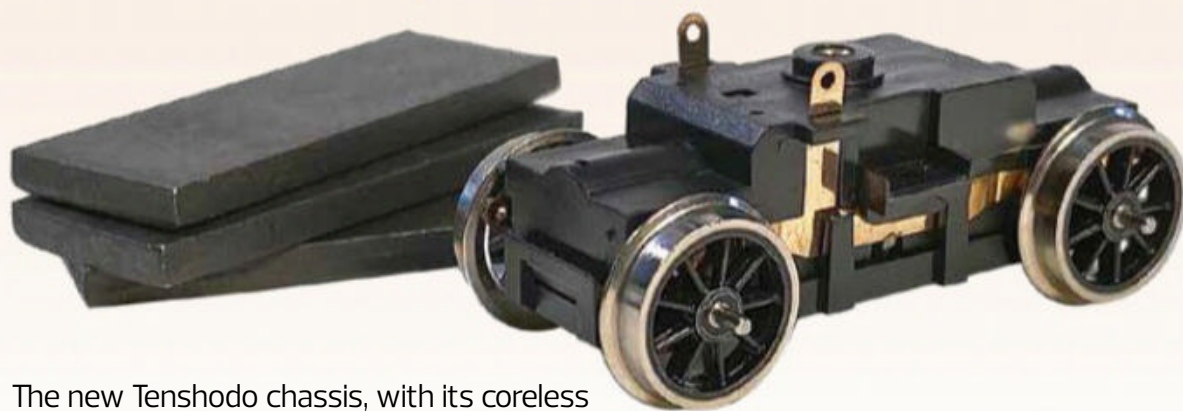
*Some chassis
available for
16.5, 12 and
9mm gauges.*

Naturally, this review is not exhaustive. If you browse catalogues, you are bound to find other usable, modifiable chassis, some in kit form, that will sooner or later meet your requirements. What we have chosen to show here are readily available

references, which can be bought online, straight from a French retailer or from the manufacturer.

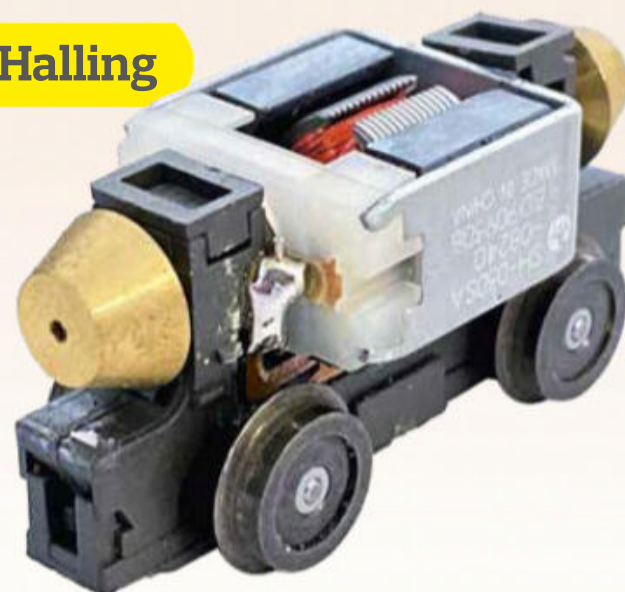
The table lists the chassis by gauge. We indicate the types of motorization, the maximum voltage consumed, the wheel diameters and the wheelbases.

Tenshodo



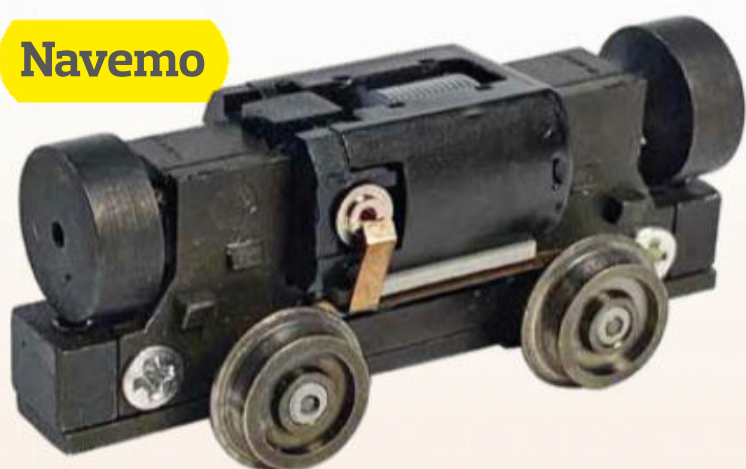
The new Tenshodo chassis, with its coreless motor. A model fitted with spoked wheels, suitable for an old-timer tramway in H0 scale on 16.5mm gauge. The chassis is supplied with ballast and the parts to fix it.

Halling



Designed for all gauges, the Halling driving chassis features 2 flywheels.

Navemo



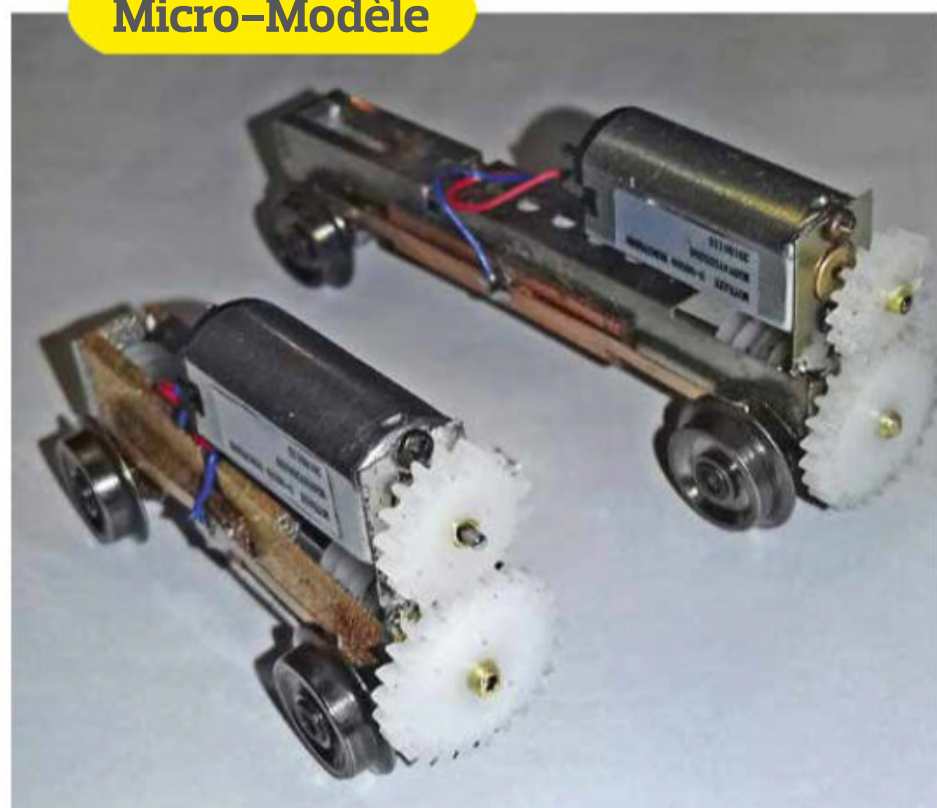
The Navemo chassis is adaptable to all gauges, the flywheels provide it with a smooth motion, provided the vehicle driven is given some weight.

The chassis of the REE Moyse industrial diesel shunter. A small technical gem, with a balanced axle. Soon available with a longer wheelbase.



REE

Micro-Modèle



Completely modular, the Micro-Modèle chassis must be assembled by the modeller. It is now supplied with a far smoother and more powerful Motraxx motor, and a gear cascade for the transmission.

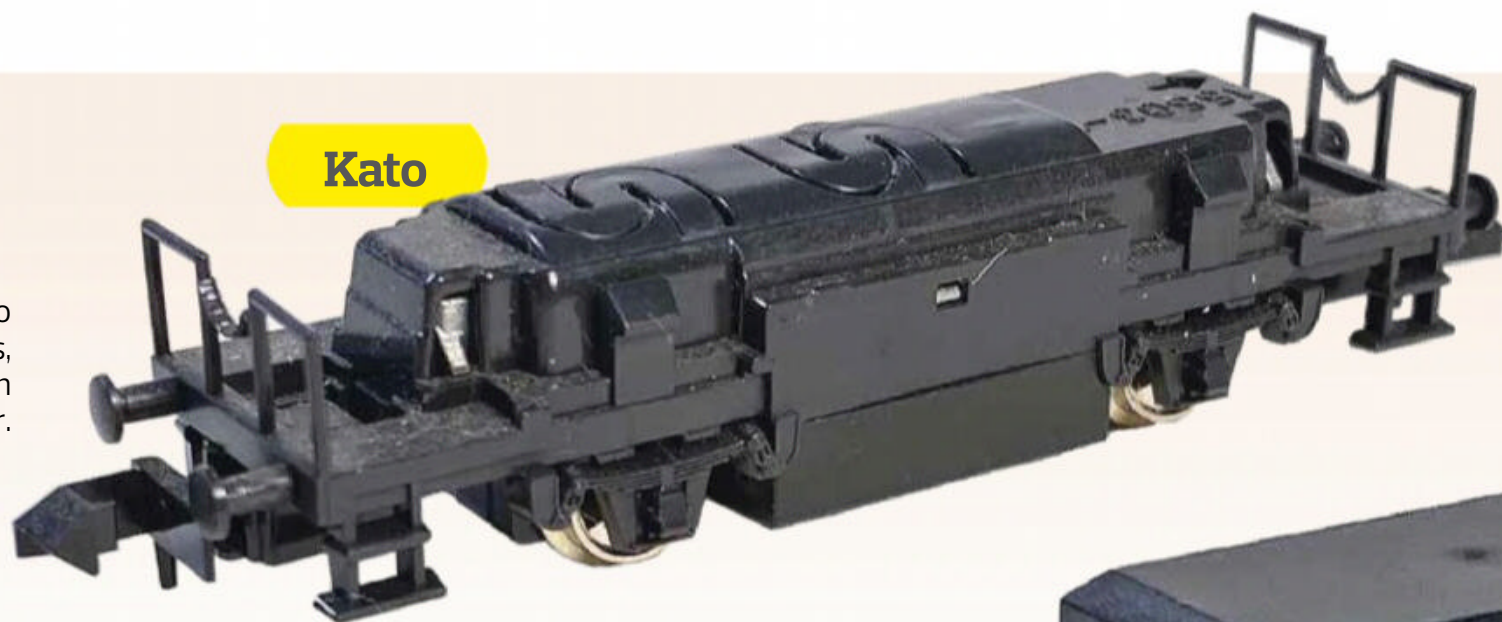
PMT



The PMT chassis offers by far the longest wheelbase. Ideal for a small 4-wheeler railcar. Its running qualities are perfect, mainly thanks to the weight of the all-metal construction.

Kato

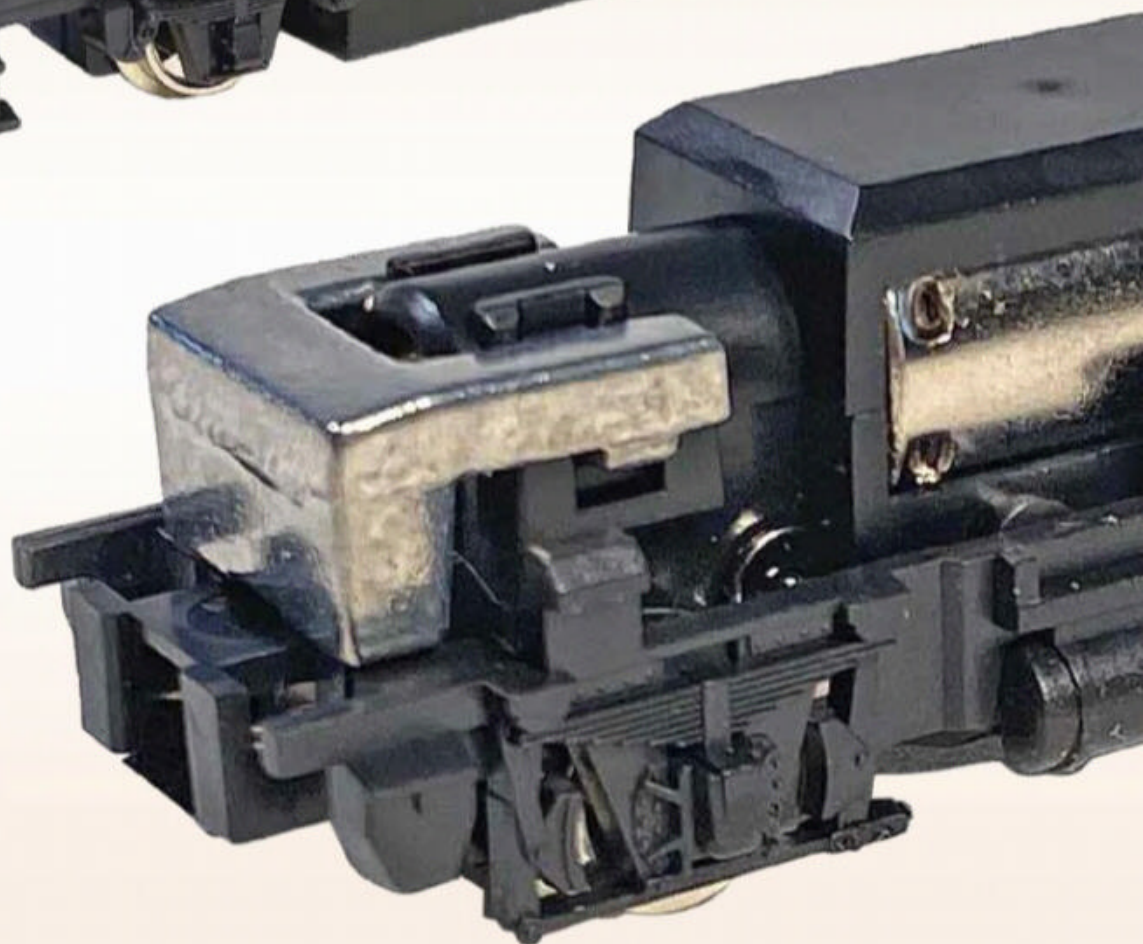
The classical Kato 4-wheeler chassis, now supplied with a coreless motor.



The small MinitrainS chassis. The motor is fitted with a flywheel and a gear cascade which ensure very smooth running and good haulage power.



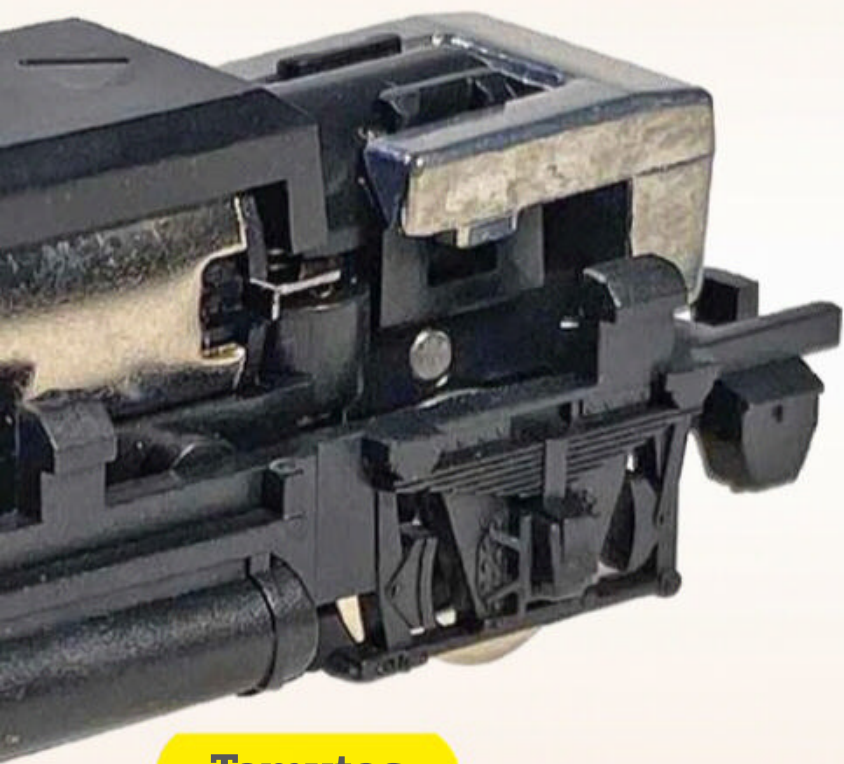
MinitrainS



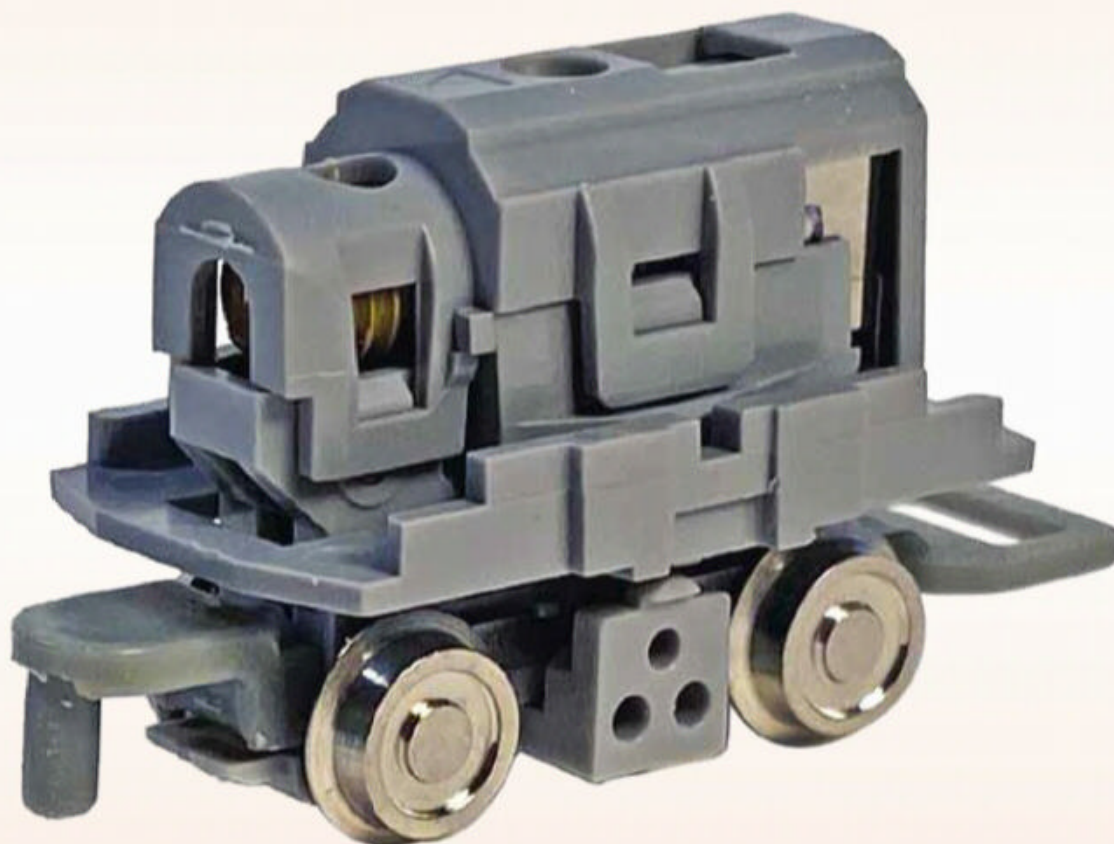
MAIN DIMENSIONS

Manufacturer	Model	Overall dimen.	Gauge	Wheelbase	Wheel diam.	Motor	Voltage	Price observed
Tenshodo		43.8mm	16.5mm	31mm	11.5mm	coreless	12 V	48 €
REE		45mm	16.5mm	32.7 to 34.5mm	10.9mm	5 pole	12 V	Available 2022
Navemo		50.4mm	9-12-16.5mm	22.8mm	8.8mm	5 pole	12 V	72 €
Micro-Modèle			9-12-16.5mm	30 to 44mm	9 or 10.5mm	5 pole/ coreless	12 V	From 59 €
Halling		45.4mm	9-12-16.5mm	22.5mm	9mm	5 pole	12 V	45 €
PMT			9-12mm	40mm	9mm	5 pole	12 V	52 €
MinitrainS		37.2mm	9mm	17.2mm	7.2mm	5 pole	12 V	Pending
Kato	11-103	58mm	9mm	28.2mm	7mm	Coreless	12 V	27 €
Kato	11-105	58mm	9mm	31.2mm	5mm	Coreless	12 V	21 €
Tomytec	TM-TR07	48.2mm	9mm	28.2mm	6mm	5 pole	12 V	21 €
Tomytec	Hakotetsu	28.6mm	9mm	16.5mm	6mm	5 pole	12 V	20 €
TMC	020 TU-Koppel	27.2mm	9mm	9mm	5mm	Coreless	4.5V	55 €
TMC	TU9A	21.4mm	9mm	9mm	5mm	Coreless	4.5V	42 €

The Tomytec chassis can be fitted with various types of bogie frames, depending on the prototype modelled.



Tomytec



Tomytec

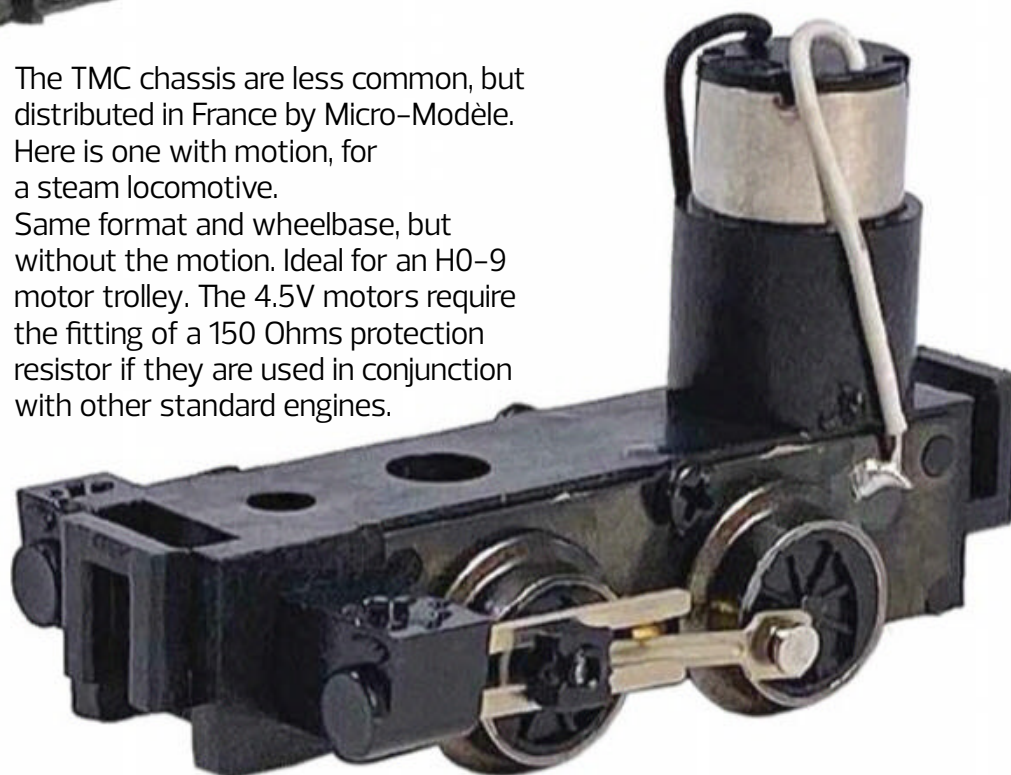
The smallest of the largest manufacturers. Designed for the Hakotetsu range, this Tomytec driving chassis is supplied with impressive blocks of ballast.



Kato

The only bogie chassis reviewed here, the Kato 11-105 is fitted with a coreless motor. The bogies have a wheelbase of 10.5mm.

The TMC chassis are less common, but distributed in France by Micro-Modèle. Here is one with motion, for a steam locomotive. Same format and wheelbase, but without the motion. Ideal for an H0-9 motor trolley. The 4.5V motors require the fitting of a 150 Ohms protection resistor if they are used in conjunction with other standard engines.



TMC

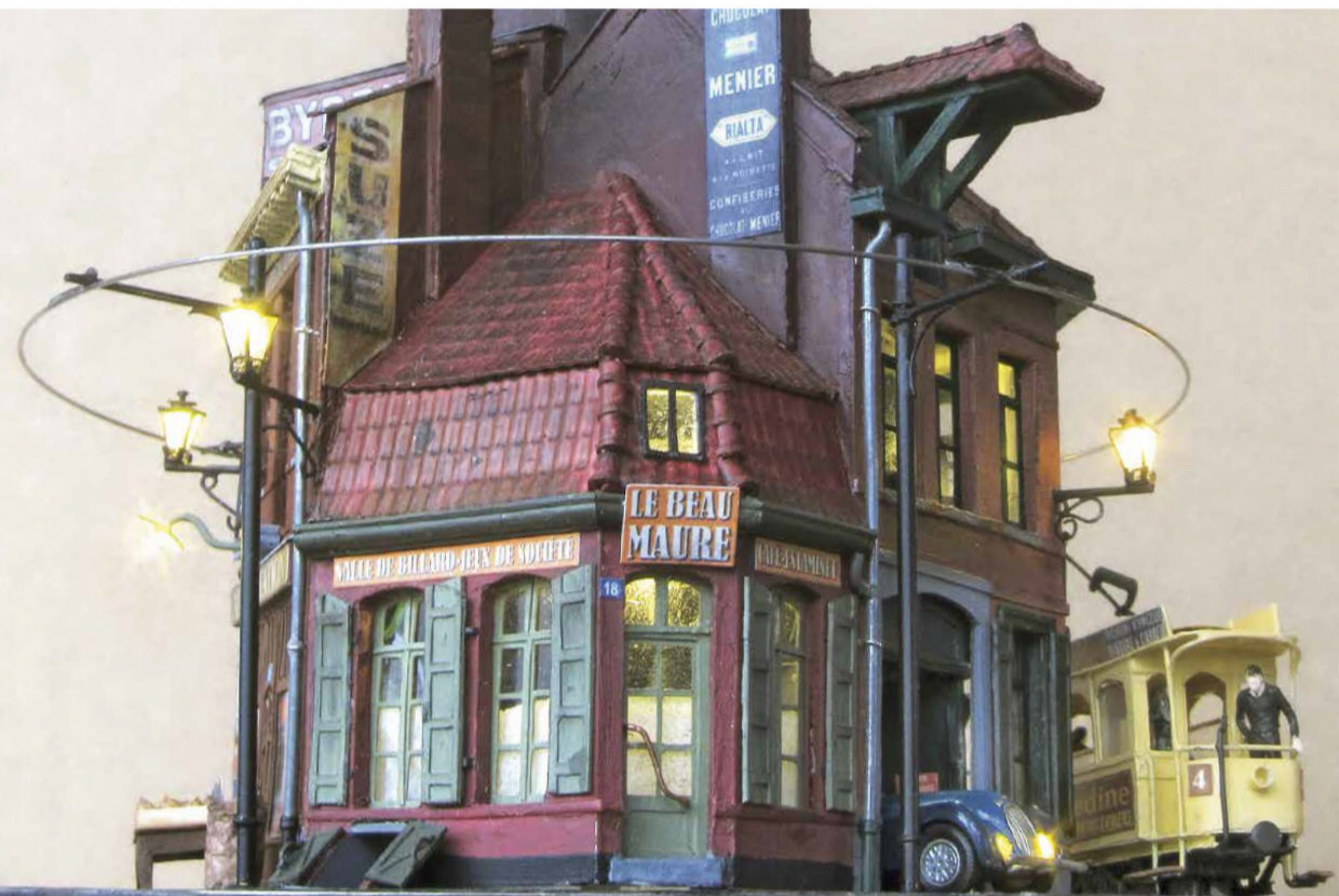
A clandestine distillery

A model railway or an artistic creation? It's up to you to decide which category Etienne Dubois' clandestine distillery should be assigned to. One way or the other, admire his work and enjoy the pictures!

Text and illustrations: Étienne Dubois

François Fontana: Hallo Etienne, a clandestine distillery in the basements of Roubaix... Tell us how you conjured up this idea?

Étienne Dubois: I had wanted to get back into railway modelling for quite some time, and reading *Voie Libre* regularly played its part in the process. I did face some constraints: the layout had to be



A pub in a corner of Roubaix! Let's discover Etienne Dubois' fabulous world.

very compact, remain visible while being sheltered from the dust, be affordable – largely scratchbuilt – and above all, small enough to enable me to finish it. I wanted certain features: the atmosphere of industrial cities in Northern France – Roubaix in particular, as I was born there – where factories with their tall smokestacks, dark tenements, wealthy ■■■



WATCH SOME MORE

Link to the blog:
a video of the
tramway in service.



*The tramway
serves an ancient
district that brings
together a factory,
dwellings, a pub
and a clandestine
distillery!*

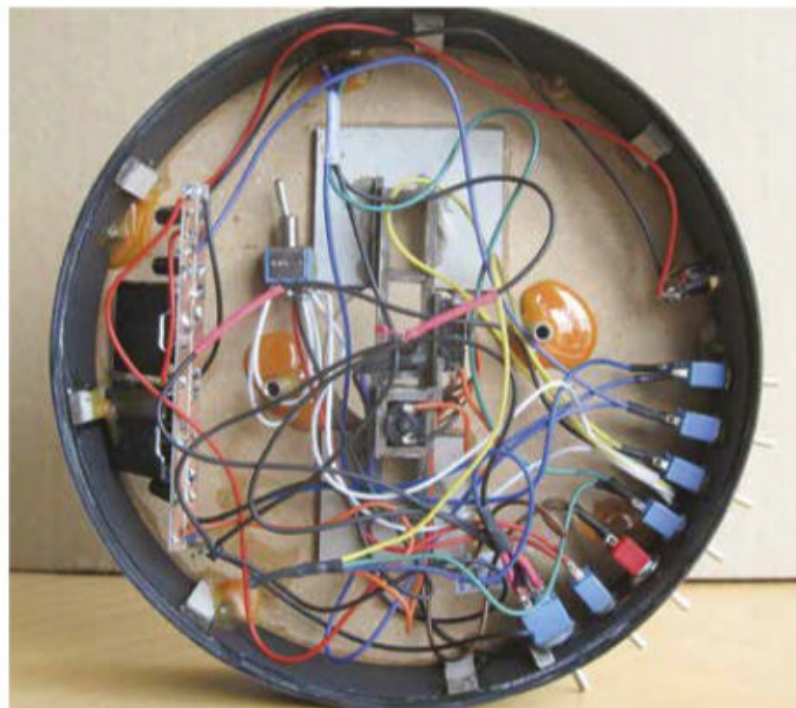
H0-16,5 Layout



The base, neatly finished in matt black, carries the launch glued to its transparent disk. In the middle, the gear that provides the rotation movement.



On the front, as it were, the control switches. Note the connectors which provide contact with the upper part of the layout.



In the base, the electronic circuit for the power, the motor launch gearing system and the switches.

■■■ houses, pubs, all blend together... The brickwork and red tiles blackened by coal, the paved streets.... At an ill-defined period, the 1950s, when both industry and pubs were still doing a brisk trade.

FF: So much for the context, the constraints that stimulate creativity, but how did you find the idea of a circular layout placed under a glass bell?

ED: Discovering the glass bell, which met my criteria regarding size and protection from dust, was what kick-started the project: fitting a layout into the bell, what a fine challenge! I opted for an approximate scale – between 1/100 and 1/87 – because in my mind, atmosphere takes



The Talbot Lago car emerges from the garage once the doors are open.



The mechnaism seen from above: the gearing system is at left, the limit switches at the front and back. The movement is transmitted via a length of wood screw, in lieu of threaded rod.

The layout at a glance

Scale H0 (1/87)
Gauge 16.5mm
Diameter 17.4cm

precedent over realism. The diameter and height (17.4 x 32cm) of the bell provided the base for the first sketches, in particular the diameter of the circle of track and the maximum size of the buildings.

FF: Building a scene organized vertically is no easy task...

ED: Occupying the entire height of the volume was indeed a problem. I could have stretched the smokestack somewhat, but I found it more interesting to add a basement level, where I imagined a canal and its industrial atmosphere,

of the type encountered in London or Manchester. A canal, water, a barge – which morphed into a steam launch due to space constraints – a wharf and a... distillery!

FF: Are you taking us for a... boat ride?

ED (smiling): Very few people know that some of the best whiskies (officially Scottish) are actually produced by clandestine distilleries installed in the basements of Roubaix! These distilleries are often connected directly to the cellars of the many pubs dotted around the city.

FF: Now that we know the secret, tell us about how you built the layout.

ED: First and foremost, I must explain that a tramway was a must-have: what else can run in a city while being sufficiently small? The Bristol-board body is fitted to the chassis of an old Arnold diesel engine. The circle of track, with a fair number of sleepers removed, is glued onto the cardboard paving.

FF: So as to understand properly, tell us the story from bottom to top.

ED: The base consists of two 5mm thick MDF disks, just the right diameter – a stroke of luck, found in a graphic arts shop – clad in black drawing paper. Two screws hold the bottom in place, and allow for its removal. This assembly forms a box with enough space to accommodate the small number of controls, the motorization of the boat with its female jack connector, and a small electronic module providing different voltages from a basic 9V supply generated by a recycled controller. The additional reversing switch, glued on the bottom of the base, allows to reverse the direction of travel of the tramway. On the top, besides the eight contact studs, five nail studs hold the glass bell in place.

FF: We are now level with the canal water...

ED: The boat is built out of paper, and "floats" on a disk of transparent plastic for photocopiers whose axis, a male jack ■■■



Squeezed in between the factory and the pub, a small house with its ground-floor grocery.



In front of the factory, the tram rumbles across the canal on a girder bridge.

H0-16,5 Layout



A fine night scene when all the lights are on. The buildings are made of card, with embossed plastic roofing sheets.

■■■ connector, is fixed in the middle of a gear. This assembly is powered by a driving mechanism located in the base. Briefly pushing a button puts the disk into motion until a limit switch stops the boat next to the wharf. The jack connector also powers the lamp on the boat, with thin brass wires embedded in the paint representing the water. The paint applied to the plastic disk on the one hand, and the paint on the canal bottom on the other hand, create an optical effect simulating the ripples generated by the boat. Quite frankly, this doesn't work quite as well as I hoped for, but I do think this approach is worthwhile and has potential for improvement!

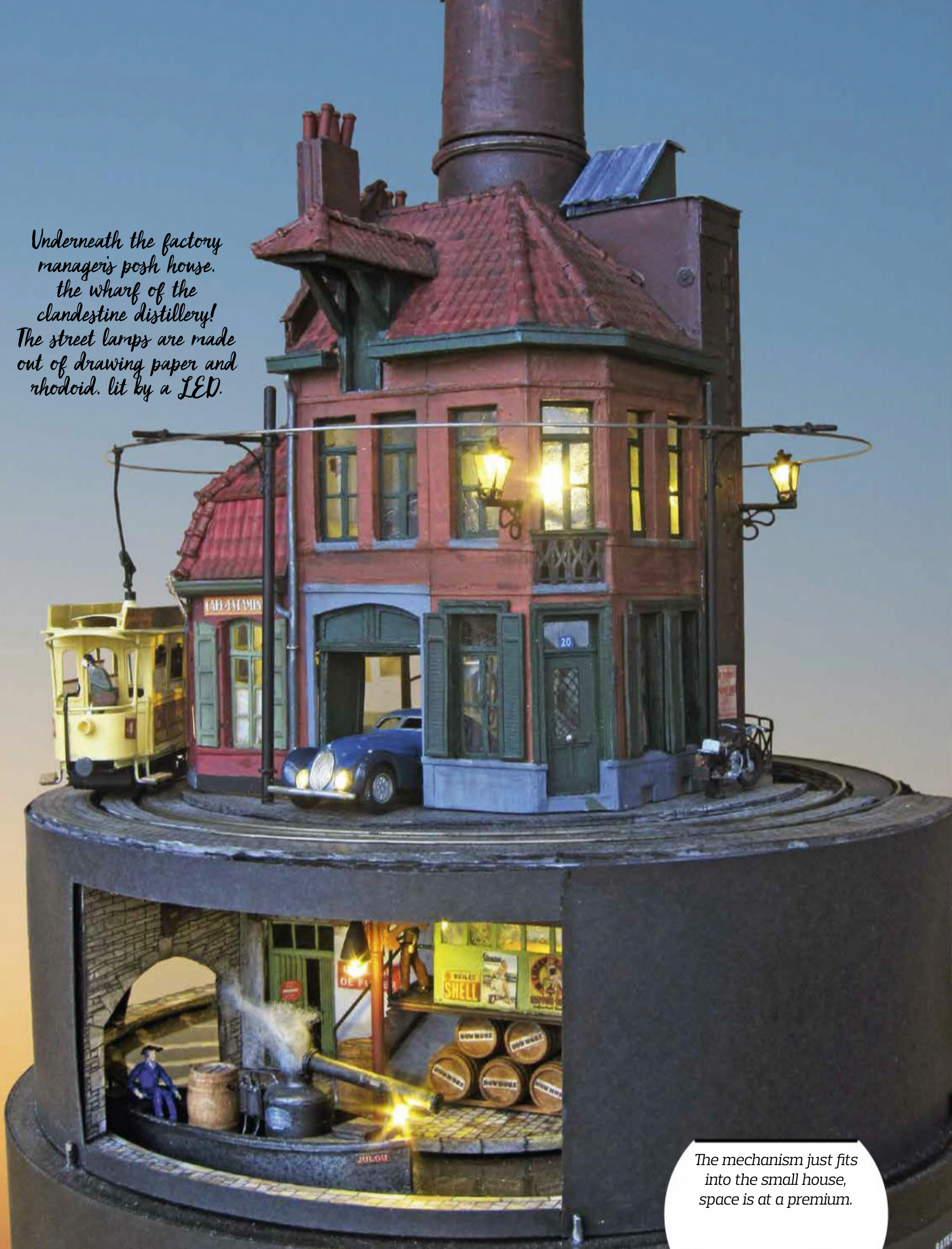
FF: Above the boat, we find the city?

ED: Everything that is above water level rests entirely on the outer bank of the canal. The inside bank, the staircase under the girder bridge, the wharf and its distillery, are actually "suspended" above the ■■■



Grains of coriander, cumin and pepper are arranged in the crates outside the grocery.

*Underneath the factory
manager's posh house,
the wharf of the
clandestine distillery!
The street lamps are made
out of drawing paper and
rhodoid, lit by a LED.*



*The mechanism just fits
into the small house,
space is at a premium.*

On the city side!

■■■ plastic disk, which rotates freely. The eight contact studs allow for the upper part of the layout to be held in place, but above all provide the electrical supply for the track, the tram, the inside lighting of the buildings (USB LEDs from Christmas string lights), the outside lighting and the mechanism used for driving the car in and out of the garage.

FF: The factory manager has a fine looking vehicle!

ED: Indeed, a splendid Talbot Lago. This is a white metal kit that a friend of mine had given me long ago and which was waiting to fit into a suitable cameo scene. The factory manager is very proud of his car. It took me quite a while to design the mechanism for opening the garage door, activating the headlights and moving the car out of the garage; visibility is not that good and the tram drivers have a certain reputation for recklessness.

A geared driving mechanism powers a length of wood screw which moves a chariot



connected on the one side to the car, on the other to the rods working the two doors. Limit switches stop the movement, which, thanks to diodes, resumes in the opposite direction when power is reversed. In this way, the system is controlled via two wires and a reversing switch with two stable positions. I added working headlamps on the Talbot Lago, lit by LEDs. Needless to say, while the principle is simple, implementing and fine-tuning it was somewhat tedious: the car only just fits between the doors, stops just in time to avoid having its chromium-plated bumper ripped off by the tram and, once parked, leaves just enough space for the doors to close again.

FF: And in summary, we have here a small masterpiece!

ED: I do have a few minor – very minor – regrets: despite several attempts, I did not succeed in building a circular arch above the canal, because of a rather complex geometry. I should have planned for the tram to feature lighting, at both ends

and inside the body, independently from the movement of the machine. Perhaps a working overhead wire would do the trick... A way of modulating the speed of the tram would have been nice too, because it's

Once the garage doors are open, the car moves forward and stops at the edge of the pavement.

kind of all or nothing and a bit fast. Finally, a larger number of figures might have brought more life to the scene... Mind you, to be honest, there is very little space left on the pavements! ■



The industrial side.



The layout is protected by a glass bell.

From the prototype to the model **BUILDING A LIFTING BRIDGE**

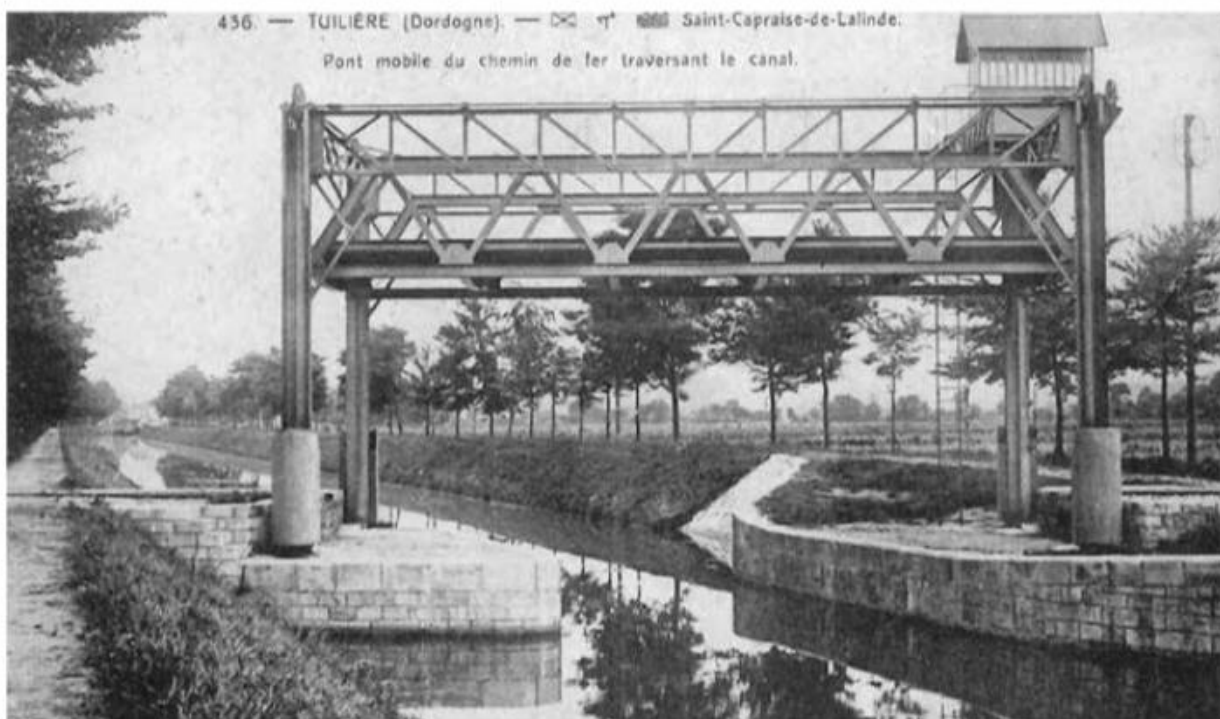
Michel Brusa-Pasqué is fond of bridges and on shows, visitors enjoy watching things move. Hence the idea of a mobile bridge across a canal, on his layout.

Text and illustrations: Michel Brusa-Pasqué

**UP
AND DOWN**



1 A small motor trolley runs across the lifting bridge on Michel Brusa-Pasqué's H0-12 layout.

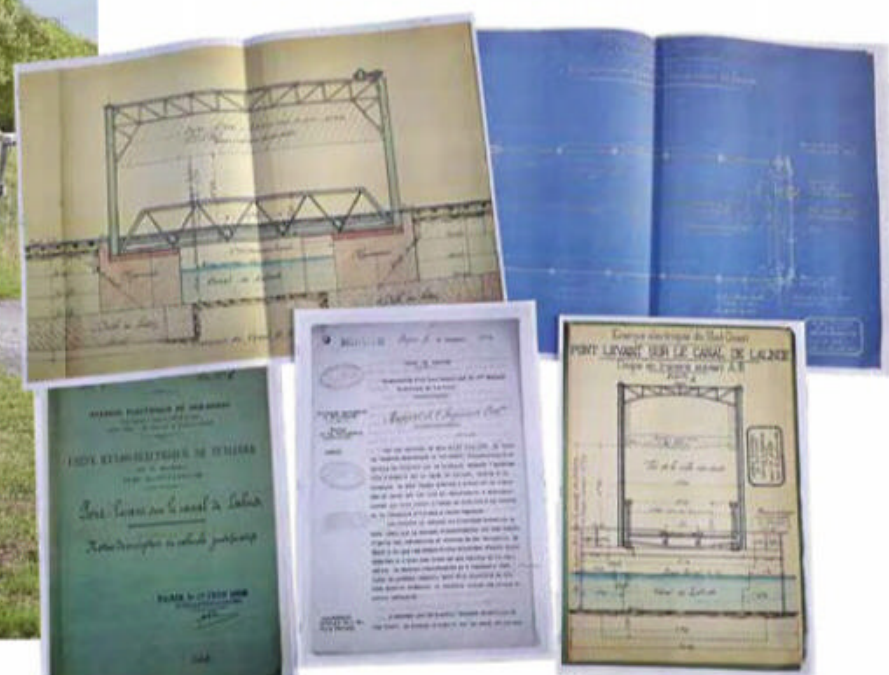


2 Here is the prototype seen in the 1910s (**left**) and the bridge over the Lalinde canal as it is today (**below**): a highly original structure!

SUPPLIES

11 cog wheels, module 0.5, 12V motor with j50/1 reductor, limit switches.

Threaded rod, nuts, 0.3mm diam. piano wire, copper-clad epoxy, nickel silver and polystyrene strips.



Wanting to model something reasonably plausible, I was on the lookout for examples of small mobile railway bridges. Such creatures are few and far between, but some can be found if you are prepared to spend some time browsing online. One of them, built in 1910 across the Lalinde canal in Dordogne caught my fancy: with its visible counterweights, it has a pleasing appearance; better still, I discovered that documents could be consulted at the departmental archives in Périgueux. Let's take a closer look! Once on site, I was provided with a full file including a description, technical calculations and a set of drawings: I had hit gold! A process camera being available, I was able to take photos of the documents in excellent conditions and returned home delighted with my visit and hoping to model this bridge as accurately as possible.

ESSENTIAL ADAPTATIONS

Yes, but... some ambitions will have to be scaled down! First about the lifting mechanism, highly visible on the superstructure, but difficult to build as a working model in 1/87

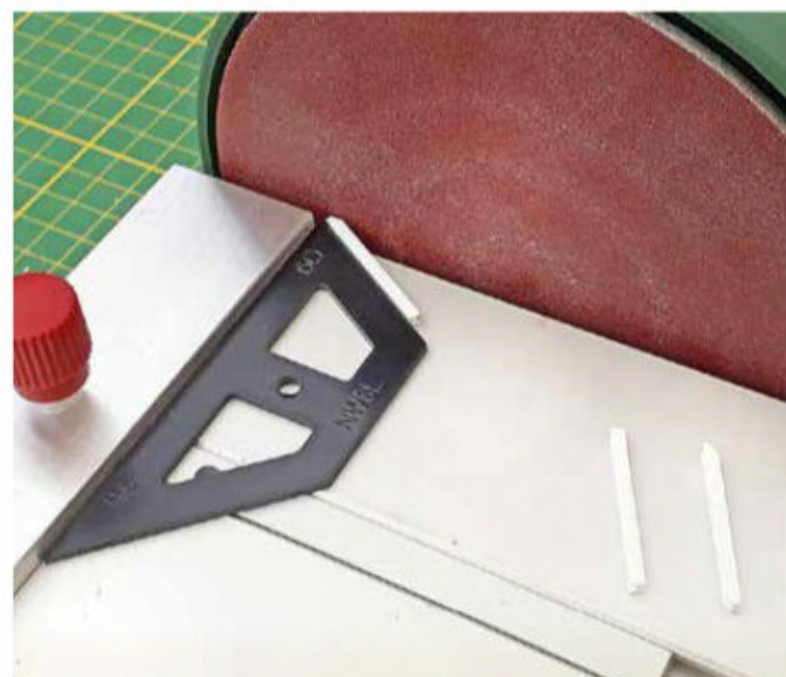
scale. Then regarding the dimensions of the metal girders: the scale L-girders of the trellis beams would be less than 1mm wide: awkward to build (at least for me) and very fragile once put together. So, to keep the model homogeneous, I increased slightly the dimensions of all the girders. For the largest, for example, 200mm U shaped girders, I used 3mm strips rather than 2.3mm had they been truly to scale. This choice can be questioned, as it will result in a structure whose appearance will be somewhat more massive than the prototype. For the sake of convenience, I also modified other features: my model bridge will be a mixed rail-road structure, unlike the prototype, which is strictly a railway bridge. Ironically, at the time, the local inhabitants had insisted on such a mixed bridge to facilitate access to their part of the town, but this was refused because frequent use by pedestrians and road vehicles was perceived as a constraint for shipping. As I don't face such problems, my own bridge will be mixed!

SOME BRASS AND PLASTIC

The gantries are built out of brass to ensure sturdiness, the deck is made out of plastic strips, a material with which ■■■

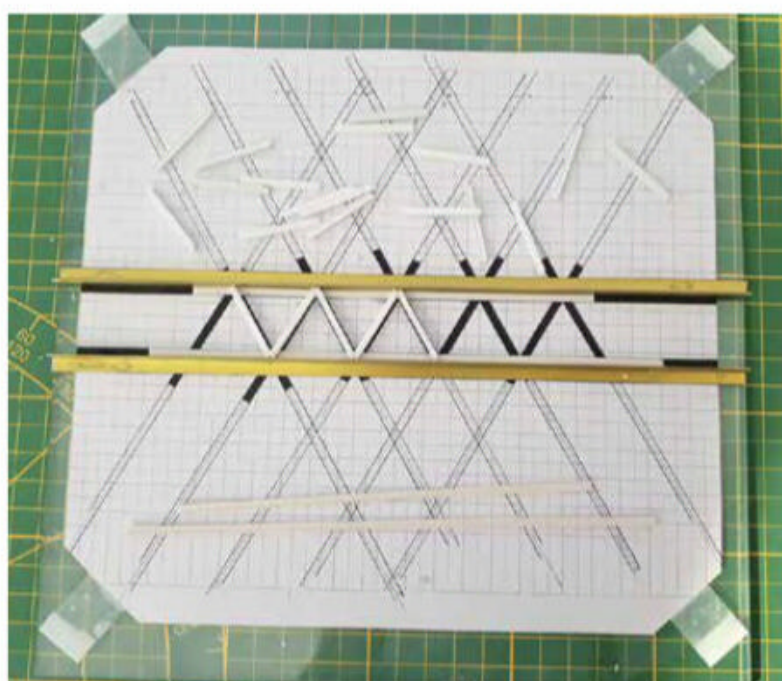


4 The H girders are cut to the right length using a Chopper tool.

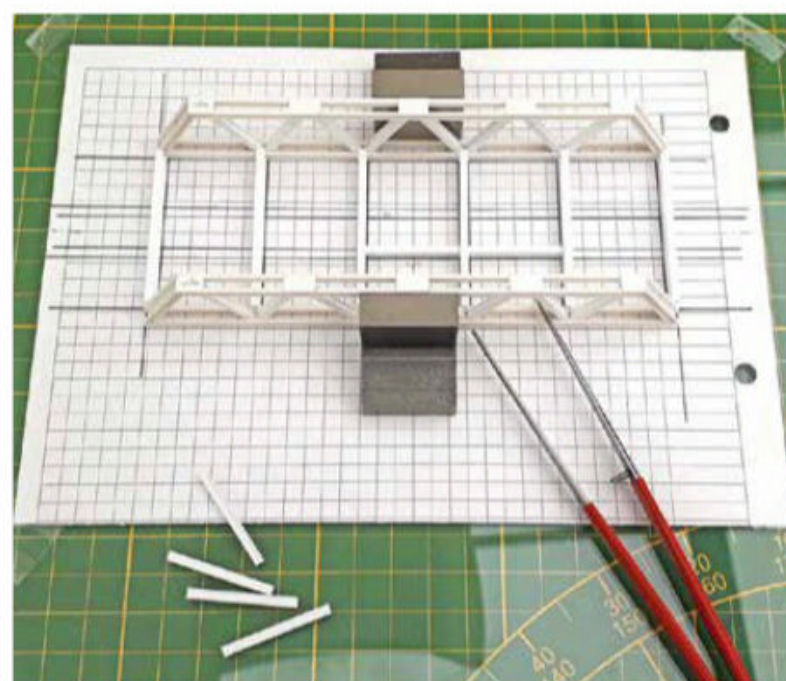


5 The edges are then cut at an angle using a lapidary.

Note the brass strips that support the long parts and ensure an accurate spacing.



6 The two trellises of the bridge are glued onto a drawn template.



7 Again on a template, the trellis girders are connected by cross-girders.

... I am more familiar. All the lengths are based on the prototype dimensions as shown on the original drawings, scaled down to H0. The 4 pulleys are functional and guide the counterweight chains, the former being shaped out of half-round brass. The remainder of the lifting mechanism is purely cosmetic.

PEEPING UNDER THE APRONS

When it comes to the motion of the bridge, everything takes place underneath! A self-elevating platform, the same size as the bridge deck, rises and drops with the proper amplitude and speed. The deck rests on this platform via four legs made out of 0.3mm diam. piano wire, which run through the uprights of the gantries, and through the baseboard of the module. As these legs are slim and concealed within the uprights, they go largely unnoticed. Adjusting this mechanism is a bit tricky, play and friction have to be restricted! That

is why I built the bridge at the workbench rather than on the layout.

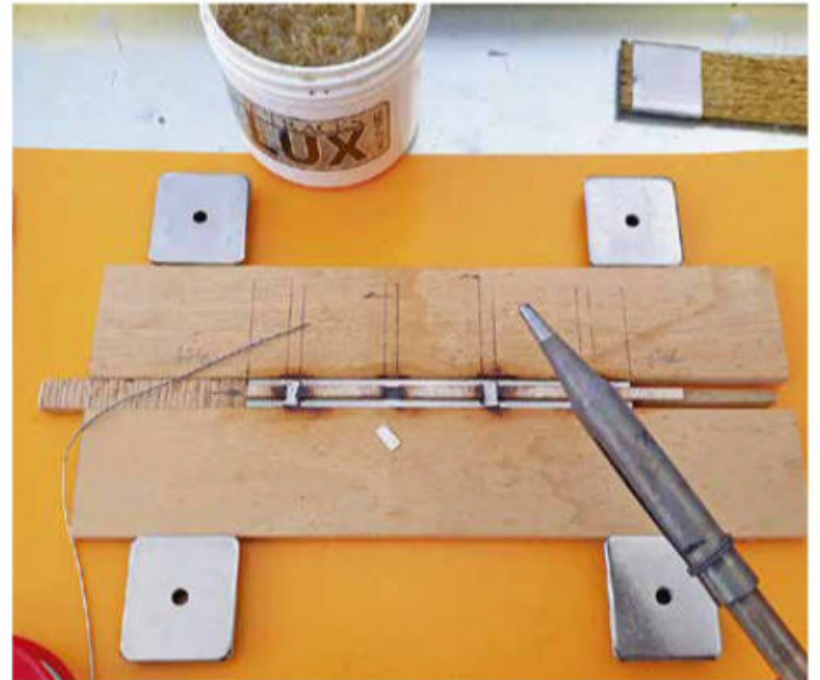
FINISHING TOUCHES

Before being painted, the plastic parts of the bridge were given a coat of primer, applied with an airbrush. The brass parts were steeped in a blackening medium: this will help the paint to hold properly, and should the latter flake in areas where there is some friction, a darker surface than shiny brass would appear. The whole bridge was then painted in a medium grey shade, as I knew nothing about the colour chosen at the time for the prototype.

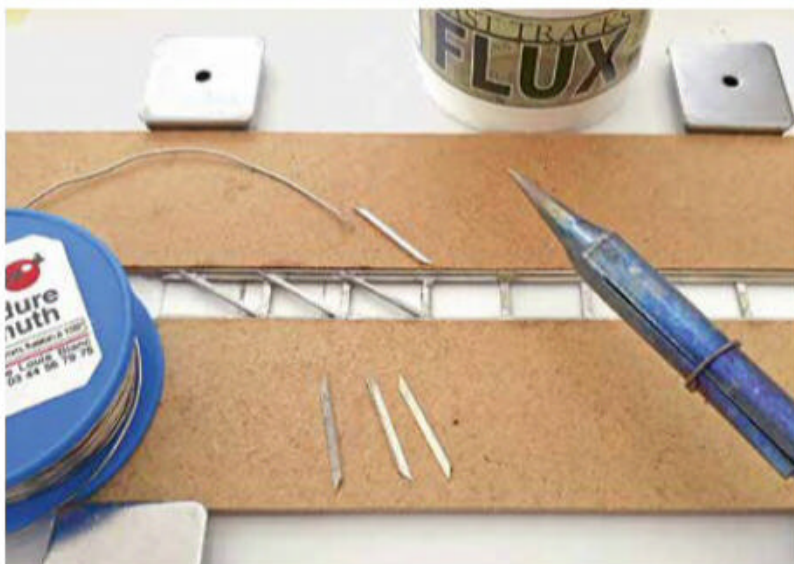
Once everything is shipshape, the bridge was put into place on the layout and integrated into the scenery. Trains can then run, the bridge can move up and down, despite the fact that the prototype has seen neither trains nor boats for many, many years...



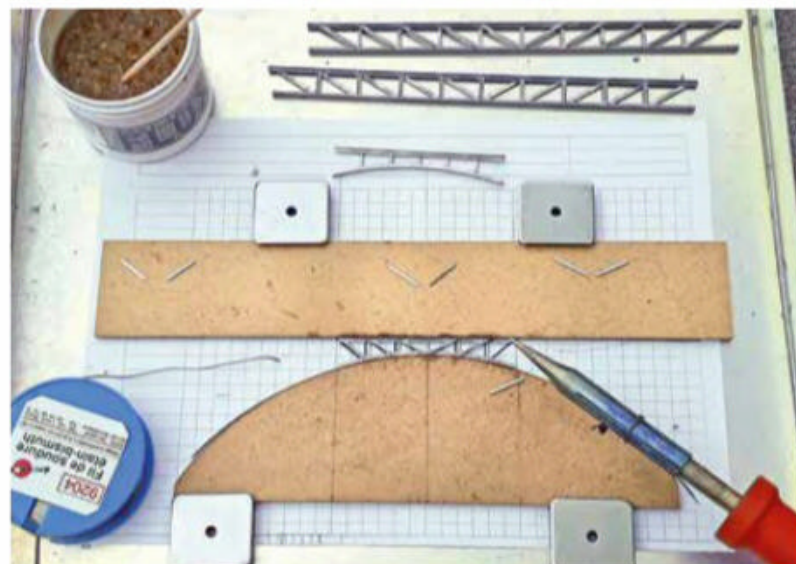
8 The bridge is completed, once the track has been laid, the deck plating will be installed.



9 The trellis uprights of the lifting mechanism are assembled by soldering nickel silver strips. Michel uses tin-based solder.



10 The same technique is used for making the top beams. The cross beams are assembled using low temperature tin/bismuth solder.



11 The arcs at the entrance to the bridge are assembled on an MDF template.



12 The trellis uprights are fixed onto two plates screwed onto the trackbed. The brass counterweights are not the final parts yet, but the grooved pulleys are.

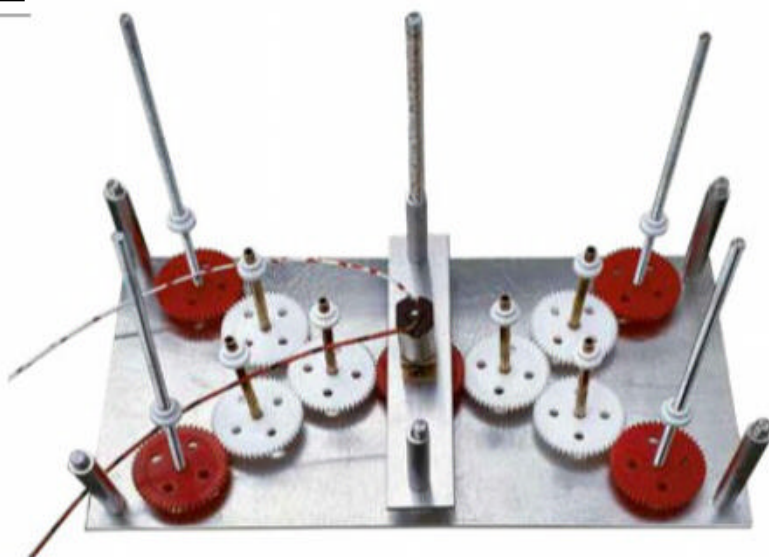


13 The brass cross-beam at each end is an essential part: it sits on the piano wire legs, ensures the guiding by sliding inside the uprights, and holds the hangers of the counterweight chains.

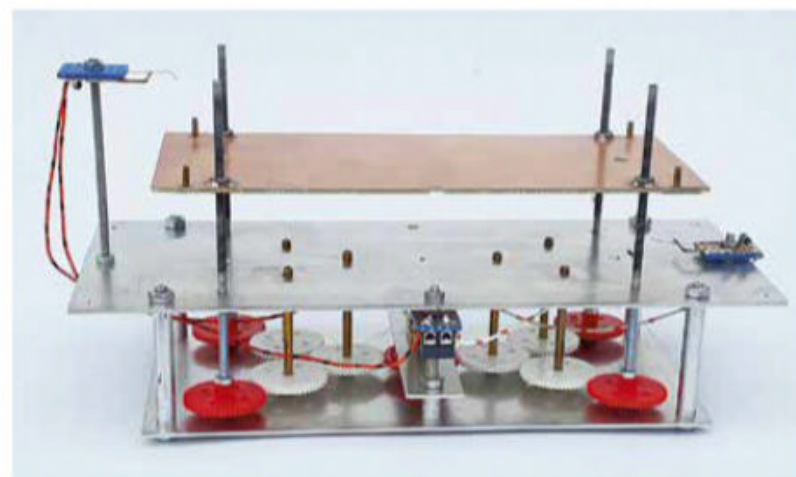
The brass cross-beam, by resting on metal supports, provides electrical continuity with the rails.

TO TAKE A CLOSER LOOK

Link to the blog:
a video of the
bridge in service.



14 Peeping under the aprons! Here is the mechanism: the motion is transmitted simply via a cascade of gears to the four threaded rods fixed onto the red gears.

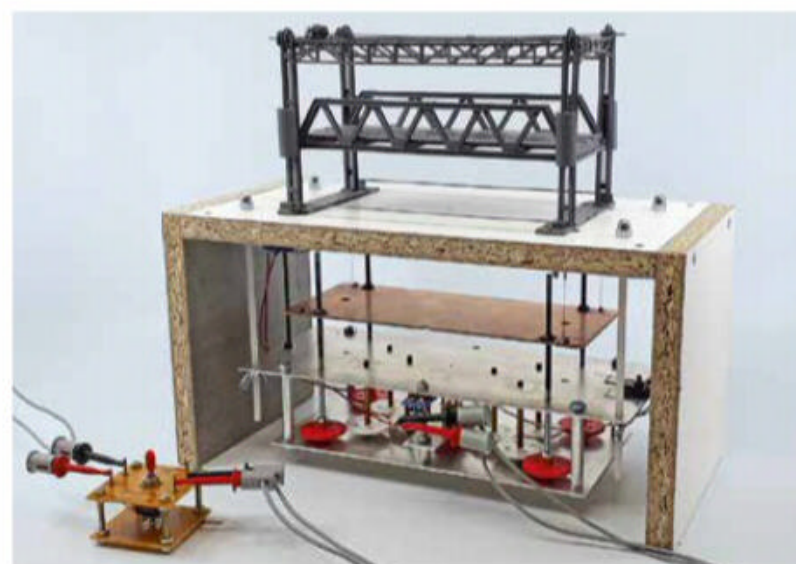


15 The mechanism is enclosed between two aluminium plates. The plastic bearings ensure a smooth rotation of the gears shafts. The copper-clad epoxy plate rises and drops thanks to the threaded rods.

The nylon threaded rods help to reduce the noise level.



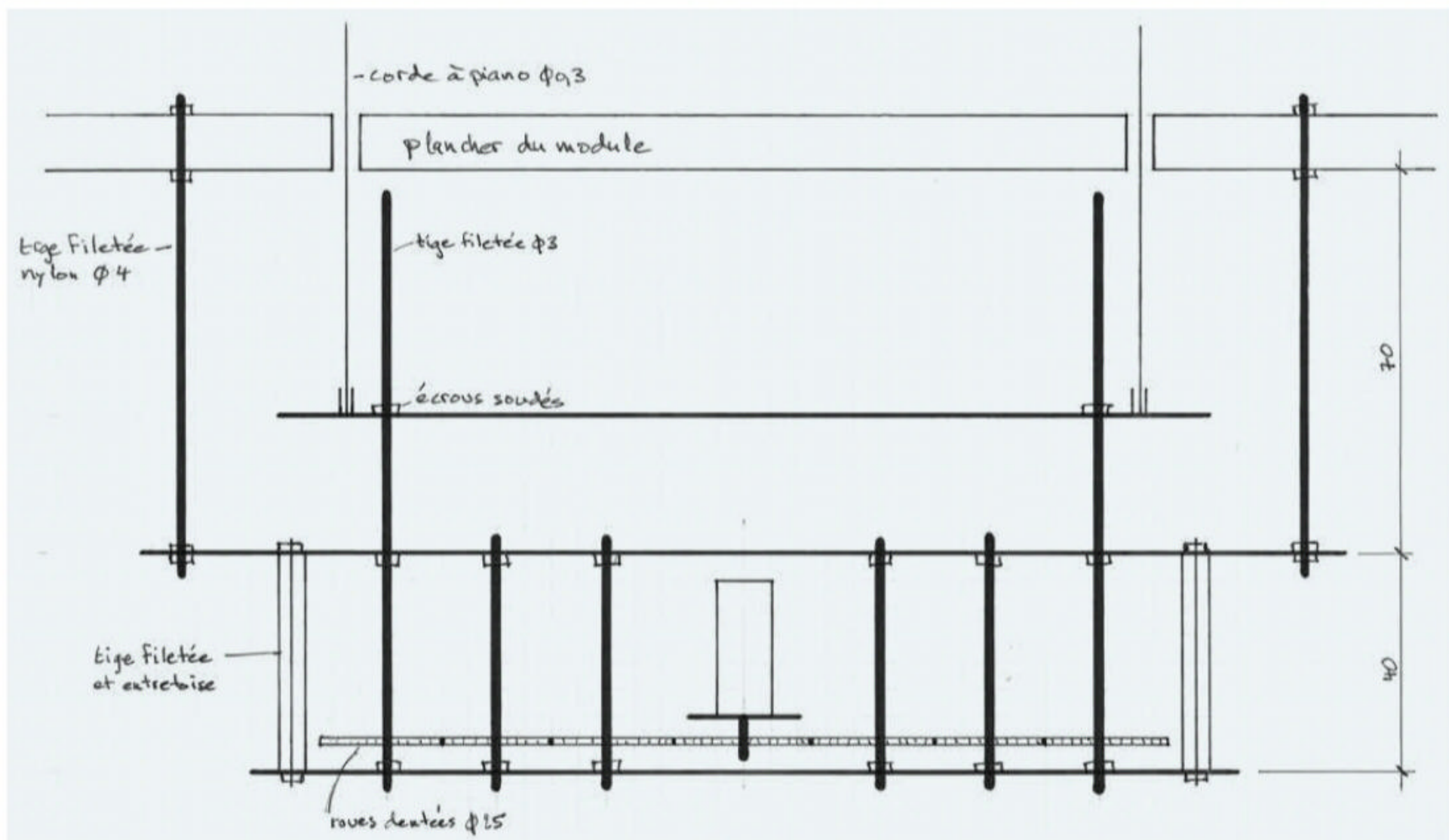
16 The tubes at the angles house the piano wire legs connected to the bridge deck. Note the limit switch, it has an equivalent for the upper position on the other side.



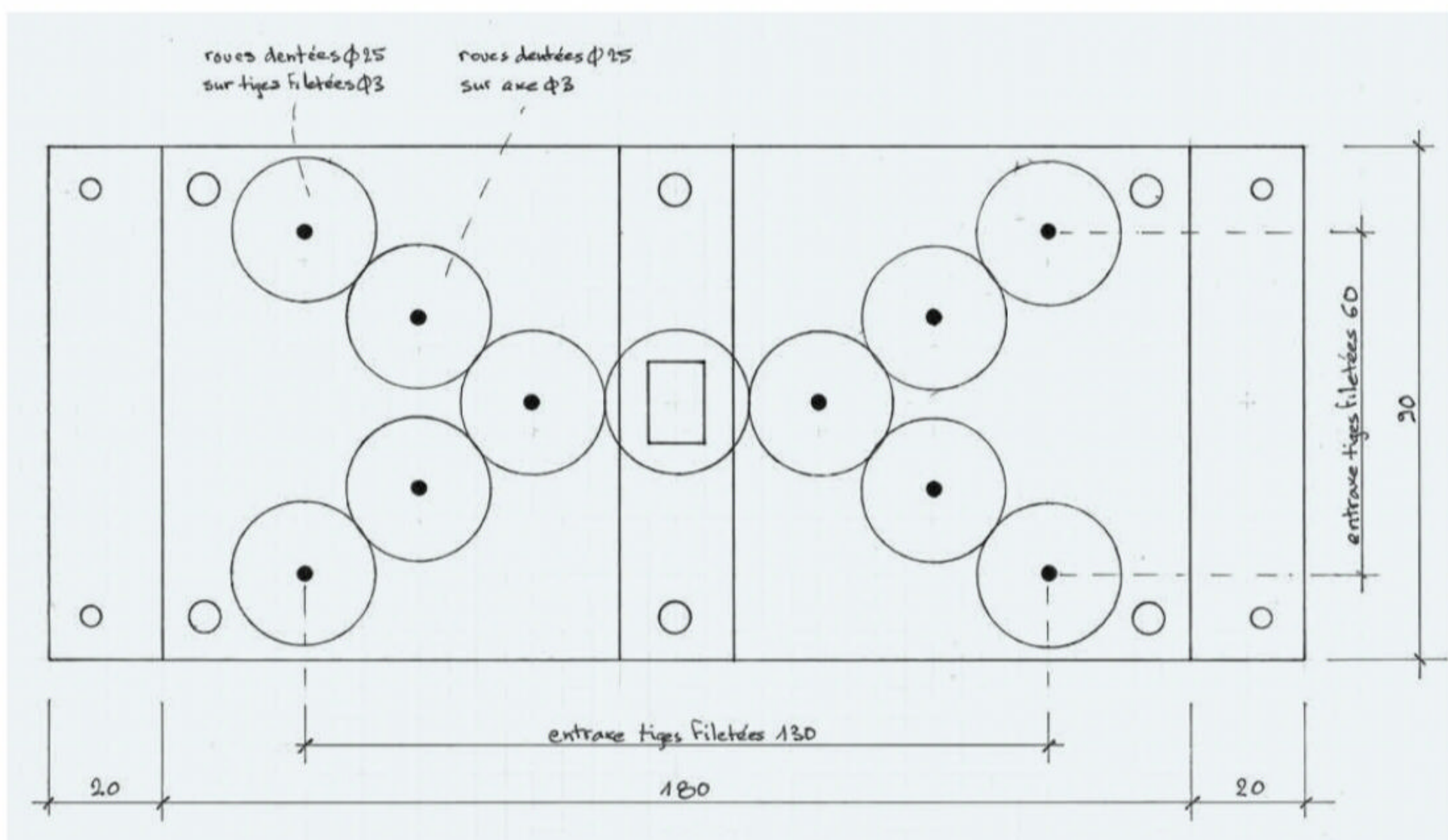
17 The entire assembly being adjusted and tested. The two rods connecting the bases of the uprights are removed once the bridge is in place on the layout.



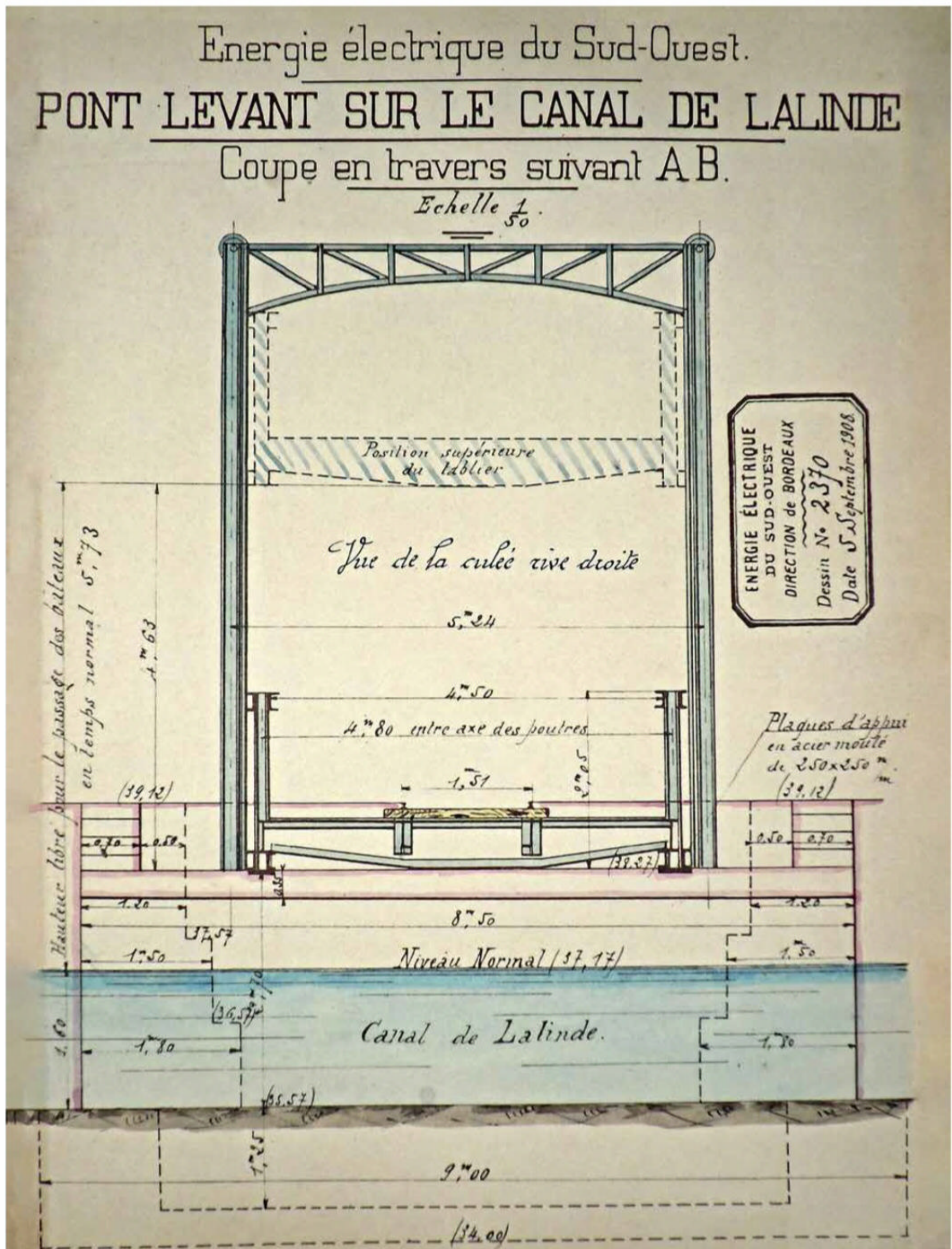
18 The bridge in the upper position. A Brissoneau & Lotz railcar, from the Cyril Ducrocq range, is waiting for the bridge to be lowered.

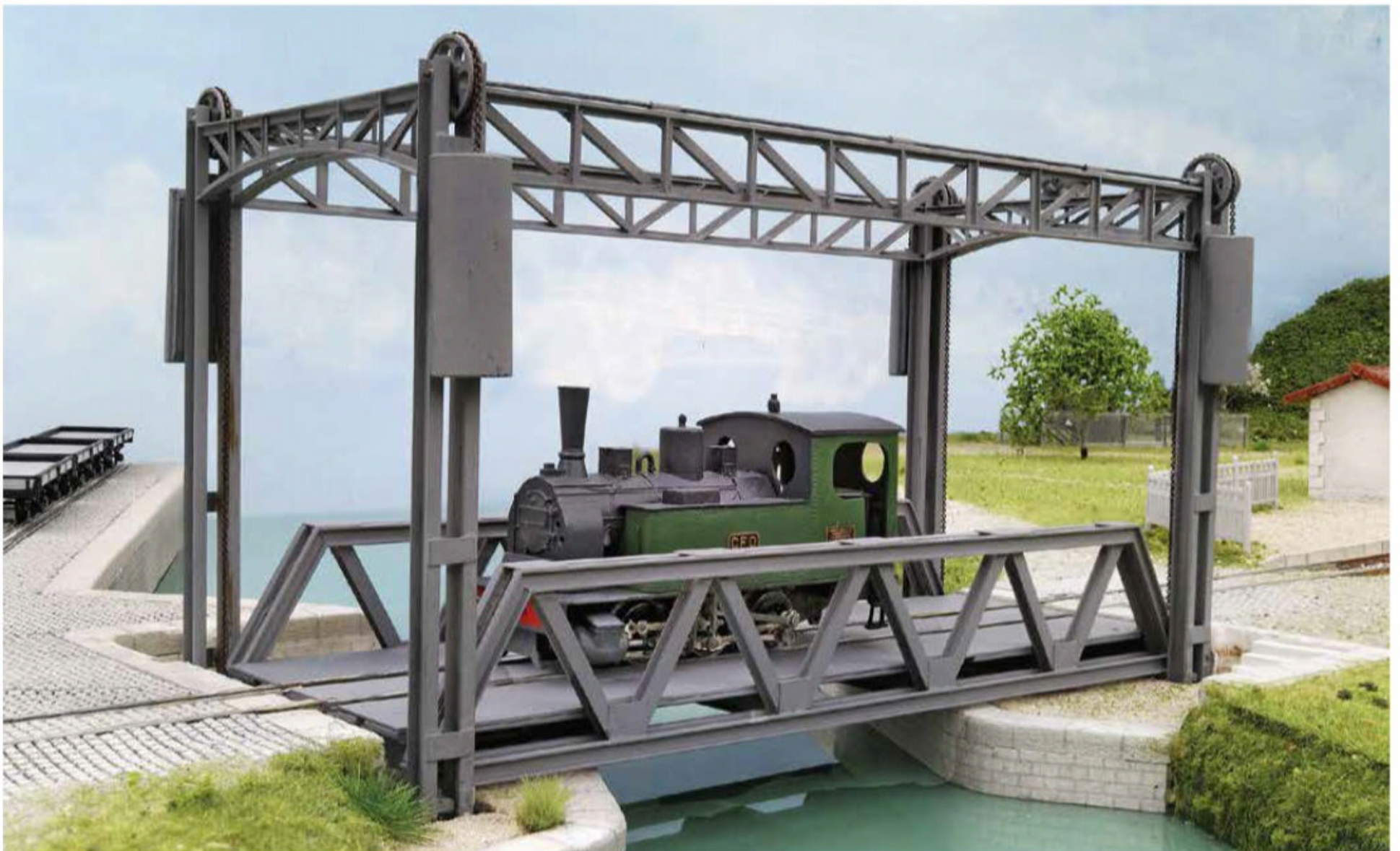
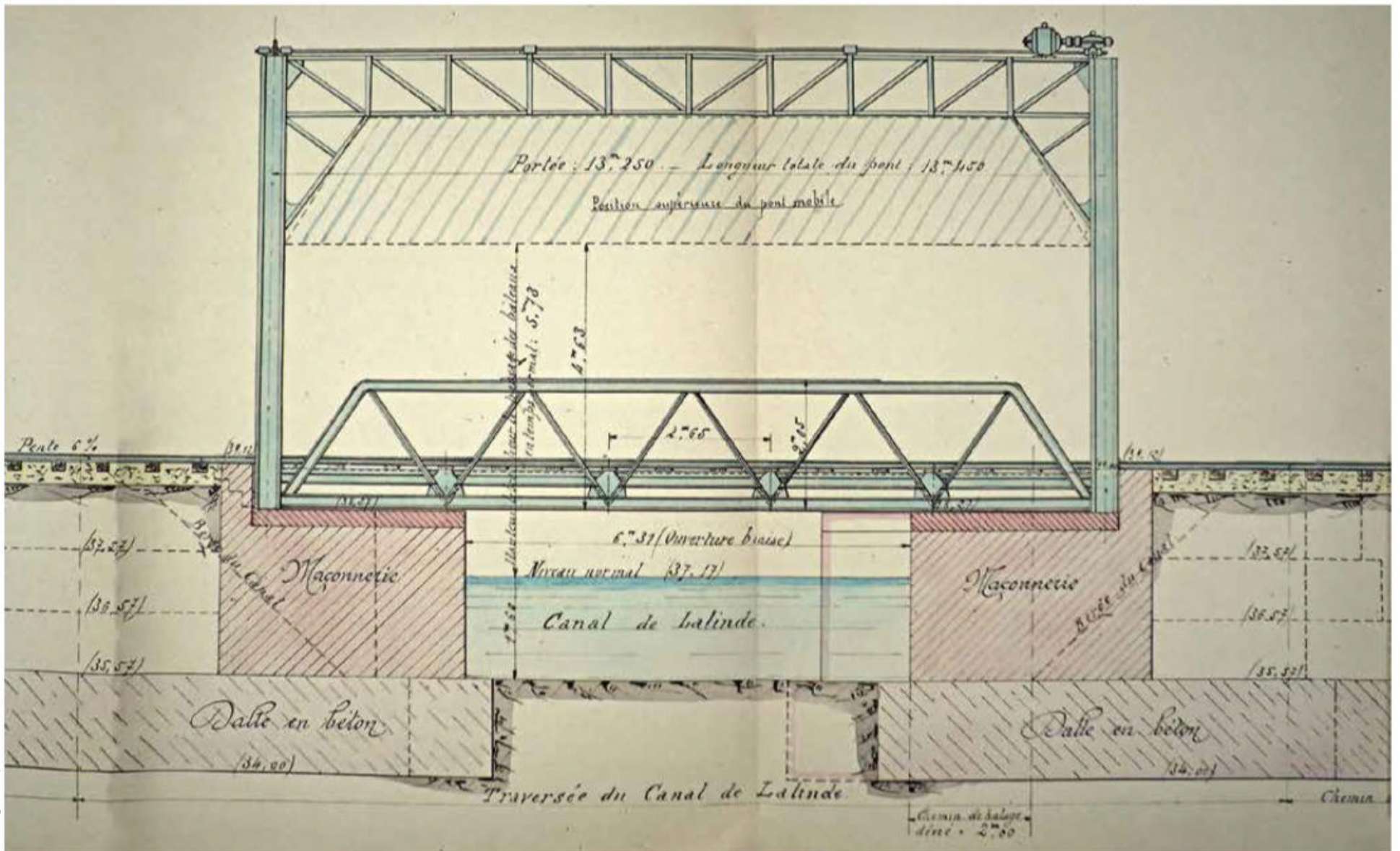


Vertical cross-section



Horizontal cross-section







A steam train
at Bunyola.

THE BALERICS, MAJORCA

The Palma to Sóller railway

Majorca, in the Balearic archipelago, is famous for its beaches, its ancient ruins, its lively nightlife and its tennis champion, but also for its railway! Let's take a closer look.

Photos (unless otherwise mentioned): **Jean-Louis Rochaix**
Text: **Sébastien Jarne**

*Map
of the island
of Majorca*



Drawings: Éric Fresné

A railway network was built very early in the island of Majorca. Narrow gauge lines extended around Palma, the capital, as early as 1875.

The harbour of Sóller, located in the north of the island, is separated from Palma by a mountain range. Communications were difficult and a rail connection was sorely needed.

Creation of the line

The Palma to Sóller railway company was finally created in 1905 and construction work began in 1907. It was delayed by technical problems and financial difficulties. Thanks to the law on "Secondary and strategic railways", which came into force in 1908, the additional costs were met and work was finally completed in 1912. Official inauguration took place on 14th April 1912. Trains took 1 hour and 5 minutes to cover the 27km, and there were 3 trains each way every day. All

trains were mixed, consisting of passenger carriages, a van and goods wagons. In 1913, the line was extended in the form of a tramway from Sóller station to the local harbour. This made it possible to bring goods wagons to the harbour. This was when the name of the company became FS (Ferrocaril de Sóller). The track gauge was 914mm (3 foot), the same as other railways on Majorca. This was because the first narrow gauge lines built from 1875 had been created by British engineers.

Going electric

Steam haulage was inconvenient due to the long gradients on the route and the risk of starting forest fires. It was also uncomfortable in the long summit tunnel. Electrifying the line was soon on the cards and became effective in 1929, with an official inauguration on 14th July. A power station was built at Bunyola, supplying the overhead ■■■



*A train bound
for Soller*

in Palma station,
on **3rd January 1985**.

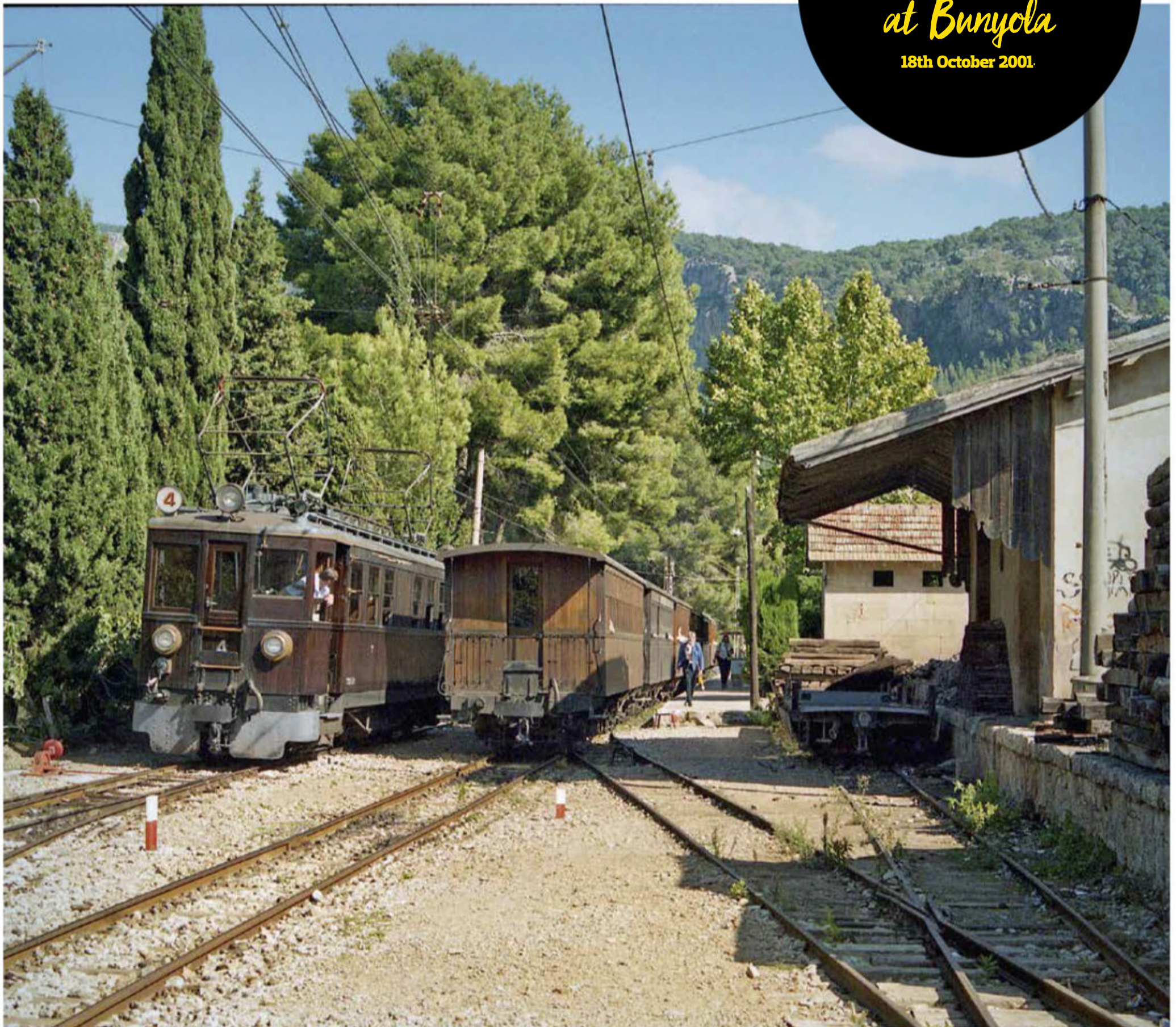


*Shunting
at Palma*

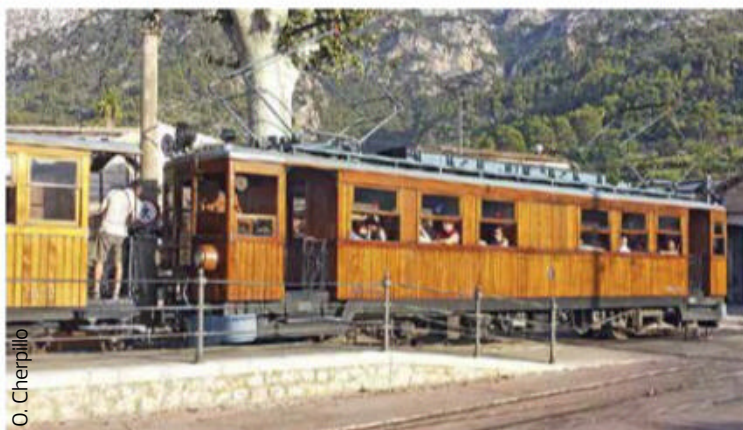
31st December 1977.

Trains passing at Bunyola

18th October 2001.



Coll. KWO



O. Cherpillo

Electric unit n° 3 at Palma, **29th August 2016.**



S. Jane

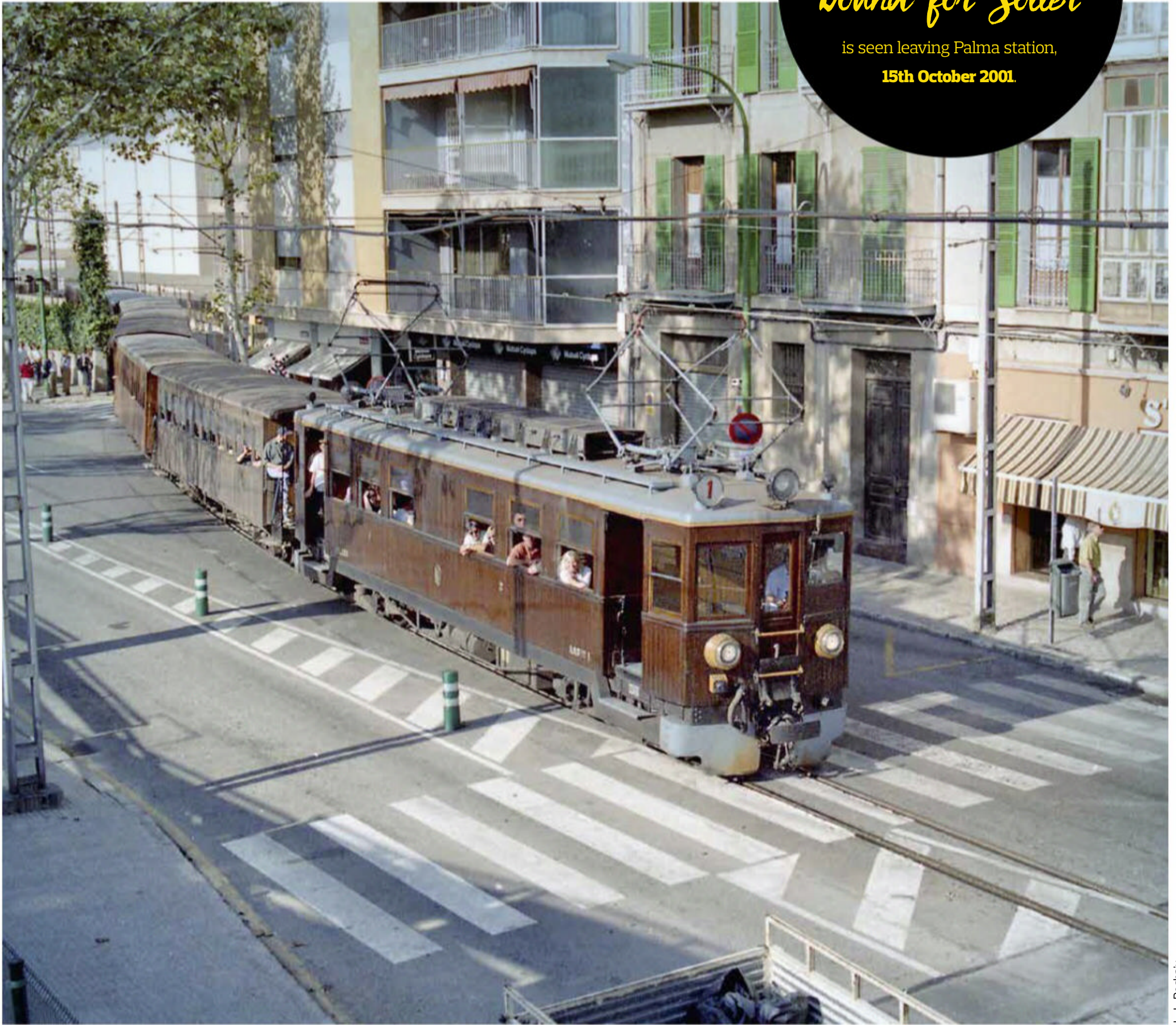
Brake van F n° 3 at Soller station, **21st May 1976.**



A Renault car converted into a rail motor trolley, built in 1924, modified in 1937, seen at Soller, **25th October 1974.**

The train bound for Soller

is seen leaving Palma station,
15th October 2001.



J.-L. Rochaix



A mixed train at Palma station,
28th December 1968.



Electric unit n° 4 in Soller station;
to the left, the tram line leading
to the harbour, **3rd January 1985.**



Palma goods station. Note the K van
on the turntable. **28th December 1968.**



Son Sardina, train bound for Soller, **25th October 1974.**

■■■ wires in 1200V DC. The number of daily trains was increased to five. The Spanish Civil War did not damage the facilities, but the unavailability of British or Asturian coal led to a reduction of the power generated and the number of trains had to be cut.

Stock

The original motive power consisted of a vertical boilered 0-4-0 T bought second hand by the contractor for building the line, and of four 2-6-0 T locomotives, numbered 1 to 4, for operating it. These engines were built by the Maquinista company in Barcelona, a company with little experience that bought a licence from the Swiss locomotive construction company in Winterthur. These engines were very similar to those found on the Brünig railway in Switzerland. In 1944, they were sold to the Majorcan railways or scrapped. In 1929, four electric motor units, numbered 1 to 4, were supplied by the Carde y Escoriaza workshops in Zaragoza, fitted with Siemens electrical equipment. In 1968, a 500hp bogie diesel-hydraulic locomotive was supplied by Ferrotrade in Madrid. It could provide

a service in the event of an interruption of the electric power (the station often operated at the upper limit of its capacity), and was also used to haul work trains. When the line was first opened, 10 bogie carriages were supplied by Carde y Escoriaza, of three types: first class, second class and composite. Given the importance of the tourist traffic, the first class compartments of the carriages and the electric units

were particularly luxurious. In 1978 and 1982, 9 carriages of similar design were added to the rolling stock. For goods traffic, the Orenstein & Koppel factory in Madrid supplied 9 box vans, 10 open wagons and 5 flat ones. Three CAF bogie brake vans were added in 1931. Both the carriages and the electric units have matchboard bodies painted brown. This feature was emphasized when the stock was modernized, giving today's trains a very historic and touristic appearance.

Infrastructure

The line leaves Palma station, runs through the city, then continues on its own right of way. Beyond Bunyola, it climbs up to the 2886m long summit tunnel (Túnel Major, altitude 239m), before dropping to Soller (km post 27). The route is winding, with a maximum gradient of 23 ‰ and features 13 tunnels and several viaducts. The workshops are located at Soller, the sub-stations at Benyola and Soller. All the stations have a stone building. The track and facilities were completely renovated over the last few years. Currently, there are 8 trains a day on the Palma line, plus four additional daily trains at peak periods. ■



Viaduct/Cinq near Soller, **11th September 2001.**

S. Jarne

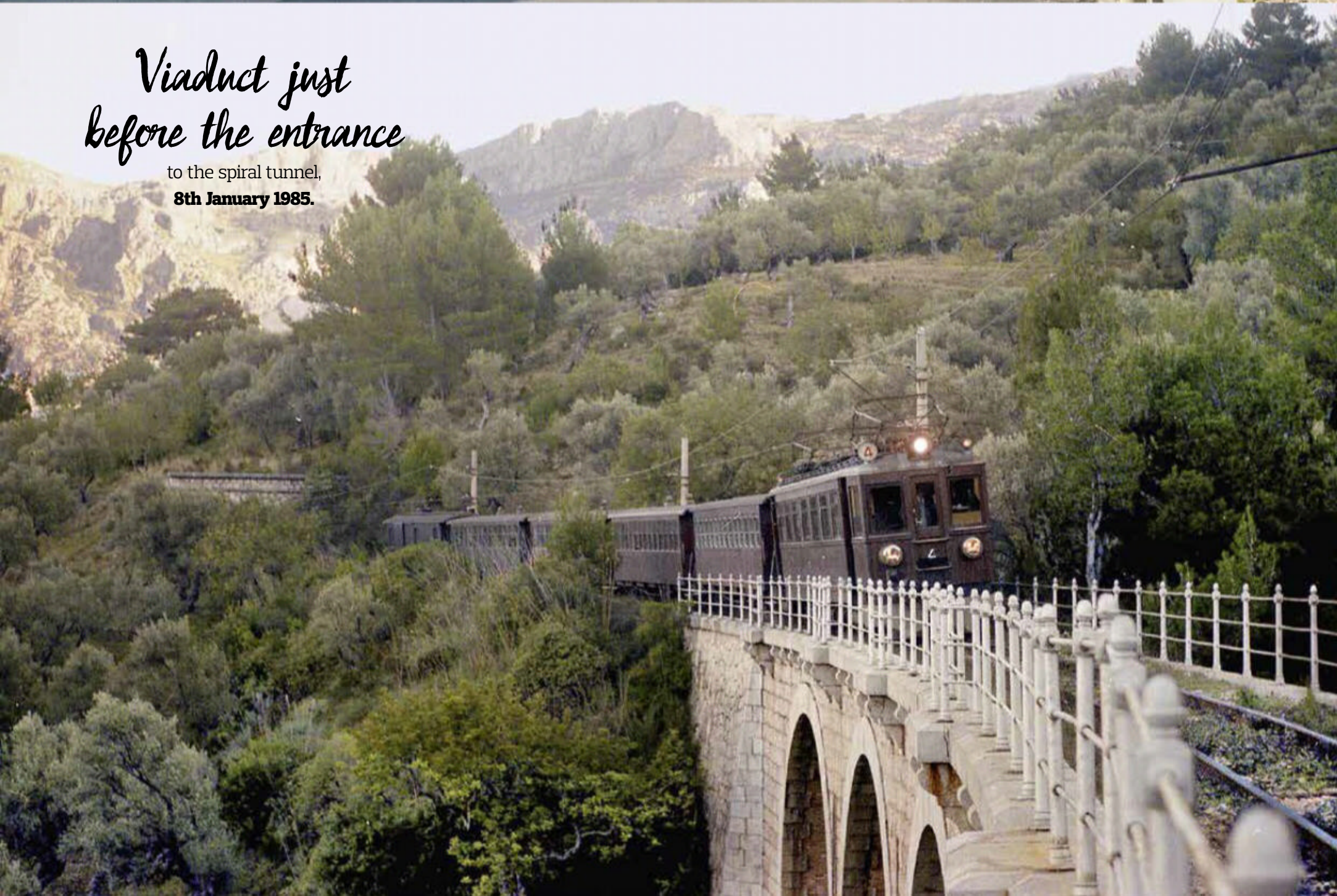
Train bound for Palma

at the Bunyola level crossing,
18th October 2001.



Viaduct just before the entrance

to the spiral tunnel,
8th January 1985.







Building Stefansgrün

A father-and-son project

My name is Stefan, I'm 12 years old and love railway modelling. When my father displayed his layouts in shows, I used to accompany him but had nothing of my own to show... So I built Stefansgrün!

Text: **Stefan Danziger**
Photo: **Christian Danziger**

My father and I wanted a compact layout, designed as a father-and-son project. Simple to use, it had to double as a test bench for me to assemble models and use tools. It had to accommodate the H0-9 trains we already had. Control had to be digital: the trains would be operated via WLAN using a smartphone, a tablet or the Roco Multimaus.

I also thought that if the project was a success, it would have to be displayed at shows; this meant it had to fit inside the family car. The layout project «Ancer: up there on the plateau», published in Issue N° 98 of *Voie Libre*, caught our fancy.

DESIGN AND CONSTRUCTION

The trackplan was drawn on the baseboard with adhesive tape, using Peco flexible track and small radius turnouts. We modified it by opting for larger radiuses. Thanks to a small present from an aunt, we ordered the wood from the hardware store. On 1st January 2020, construction began with the benchwork: a frame measuring ■■■

The layout also calls on carrier trucks used to transport standard gauge wagons. They are seen here on the curved viaduct on the right-hand side of the layout.



A small 0-6-0 T takes on water from the very typical water tower.



Behind the station, the road drops into the valley. Stefan has taken care to add many cameo scenes.

■■■ 150 x 80cm. I practiced using tools such as a power drill, a file, a fretsaw and an electric screwdriver. The relief was then built up using Styrofoam. Dad showed me how to use a hobby knife and a hot glue gun.

Meanwhile, he was building the viaduct: a laser-cut card kit. The viaduct is located in the foreground, on the right-hand side of the layout, and must be a focal point. I used plaster castings for the walls and paved roads; the ground was covered with engraved plaster. This was when the first lockdown hit us! Fortunately, we were able to manage with my Dad's stockpile of modelling materials. During my school holidays, I built the station, based on a kit from the Auhagen range. Friends gave me the other buildings, already assembled, while the water tower is one of Dad's earlier projects.

The backscene is a very important item, so we ordered a printout from a photographer who ■■■

THE LAYOUT AT A GLANCE

Scale: H0 (1/87)

Gauge: 9 mm

Track: Peco

Control: digital Roco Z21

dimensions: 150 x 80cm

*Stefan and Christian
operating the layout
they built together.*



An express train calls in Stefansgrün station.
A short tank engine, a single bogie carriage
and a small van: a typical consist.





The benchwork prior to assembly.
The adventure is about to start.



Once the benchwork has been assembled and a temporary backdrop arranged in the background, Stefan can install the houses and the layout comes to life.



The retaining walls, cast in plaster, are glued onto the sculpted Styrofoam.



The ground is modelled out of engraved plaster.

A major milestone, the track is fixed in place using neoprene glue.



■■■ selected a suitable location from the Erzgebirge area in Saxony. We fitted ca. 10m of LED strips into the ceiling of the layout, opting for a warm white light. I particularly enjoyed creating the cameo scenes with figures and vehicles.

Almost five months to the day after construction began, on 1st May 2020, the layout was complete. Wiring was somewhat beyond my abilities, so Dad took charge; I simply helped in laying the wires and soldering them. The layout is controlled by a Roco Z21 central unit and the turnouts are operated by servos fitted with digital decoders.

CHOOSING THE NAME

Many layouts in Germany are nameless, unlike France, the U.K or the Netherlands for example. A name is very convenient, it helps to identify the



Seen from the fiddleyard: Stefan puts the finishing touches on the retaining wall of the water tower.



A more delicate phase, soldering the electrical connections. The Z21 block is wired up to the turnout motor connectors visible at right.



Painting the soil: washes for the paving stones and the retaining walls, a greenish shade for the meadows.



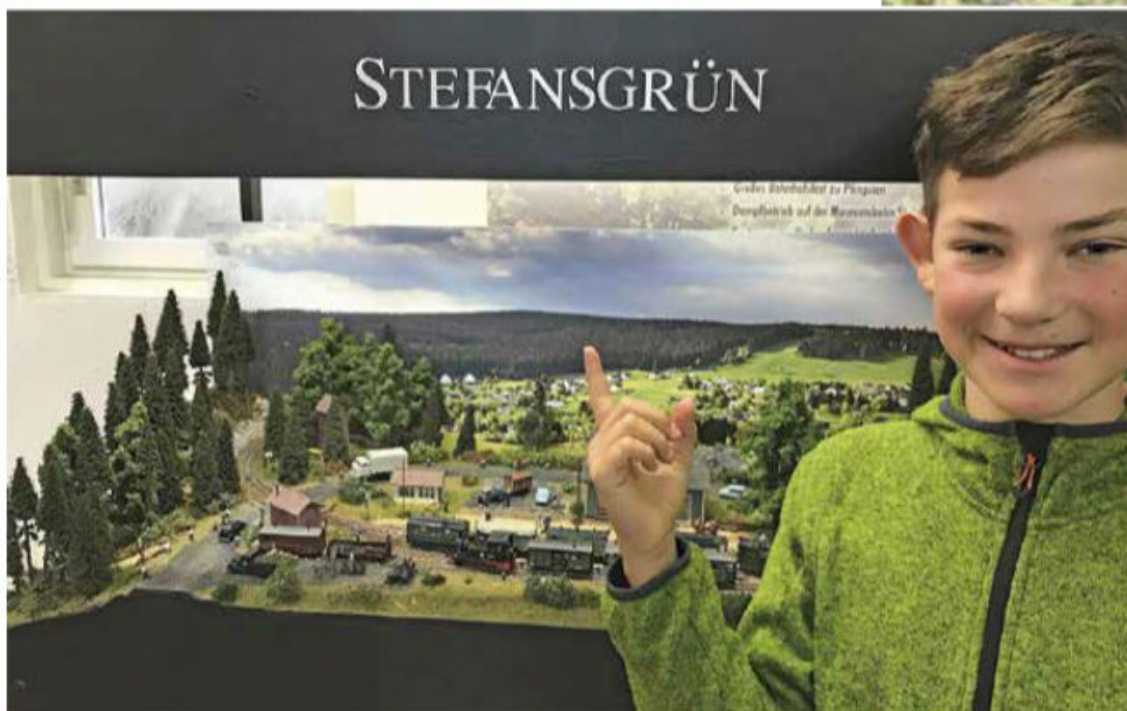
The first trains can run, a really important milestone that ensures the success of the following ones, as it is highly satisfying.

layout later on. But finding a name is easier said than done, I could not make up my mind about something both concise and consistent. I thought of organizing a competition, which my family publicized among modeller friends by promising them a prize: the winner whose name would most appeal to us would be invited to the inauguration of the layout and would receive a packet of crisps and a can of soda.

Surprisingly, I received 43 answers with suggestions. Following protracted deliberations, we decided on «Stefansgrün». Many places in the Ore Mountains range have names ending in “grün”. As this was the location of my layout, the name blended nicely with my own first name. Unfortunately, the inauguration has yet to take place, but we will get there in the end... ■■■



The layout ceiling is fitted with a strip of warm light LEDs that will enhance the whole model.



The final phase, and not the least important: placing the name of the layout. Adhesive letters are glued onto the upper fascia, painted black.

A railcar rolls into the station from the left of the layout. Admire the care taken with the vegetation and the many details.

OPERATIONS

The mixed trains mostly consist of four-wheeler carriages and wagons from the Technomodell range, period IIIa in the 1960s. The locomotives are mainly of the 0-6-0 T type, because they handle sharp radiuses better. They are from the Technomodell, Modellbau Veit, Bemo, Weinert and Tillig ranges. Four 80W loud speakers are located below the baseboard, and combined with the sound decoders of the locomotives, provide a very realistic audio environment. The hidden fiddleyard ensures operational variety.

MY CONCLUSION

I really enjoyed working with my Dad and learning how to use the tools. Building the layout was highly educational and now, when attending shows, if people ask me what I have made, I can point to the layout and proudly answer, “take a look!”.





MULTIPLE TECHNIQUES *for a garden railway Billard*

For operating his garden railway, Sébastien Fabre scratchbuilt a Billard A80 D railcar and its R210 trailer. He used a variety of construction techniques for this project, and tells us how he proceeded.

Text and illustrations: Sébastien Fabre



In the 1930s, the Billard company in Tours employed a large number of gifted coach builders who hand-made pleasingly curvaceous railcars! Modelling them is not an easy job. Following a detailed study based on drawings and on

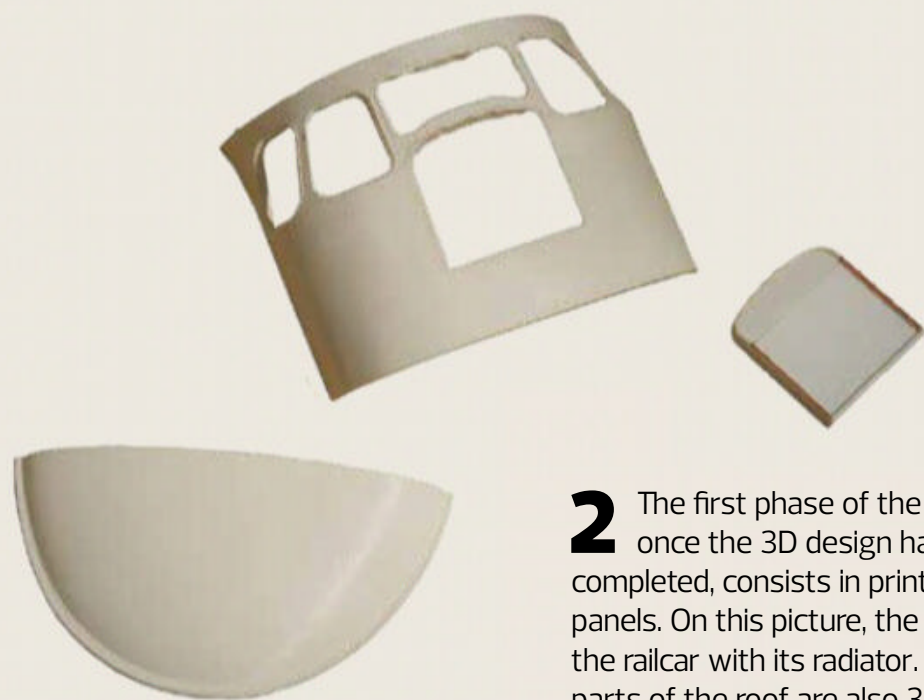
the measurements I took on the A80 D units preserved on the Vivarais and Velay-Express heritage railways, I used a variety of techniques which, combined, enabled me to build this railcar and its trailer.

The body ends

The ends of the vehicles were drawn in 3D by a friend, using the Fusion 360 software. Three different panels must be drawn: the motor panel of the railcar, the driving cab panel which also appears at one end of the trailer, and the fourth panel with a single window for the trailer. In other words, three ends and four prints. The panels are drawn with no enhancements, the window frames are added later, only the drilling points are marked. Once printed, the parts are carefully sanded.

Body sides and assembly

The body sides are drawn in 2D using Illustrator software, then machined

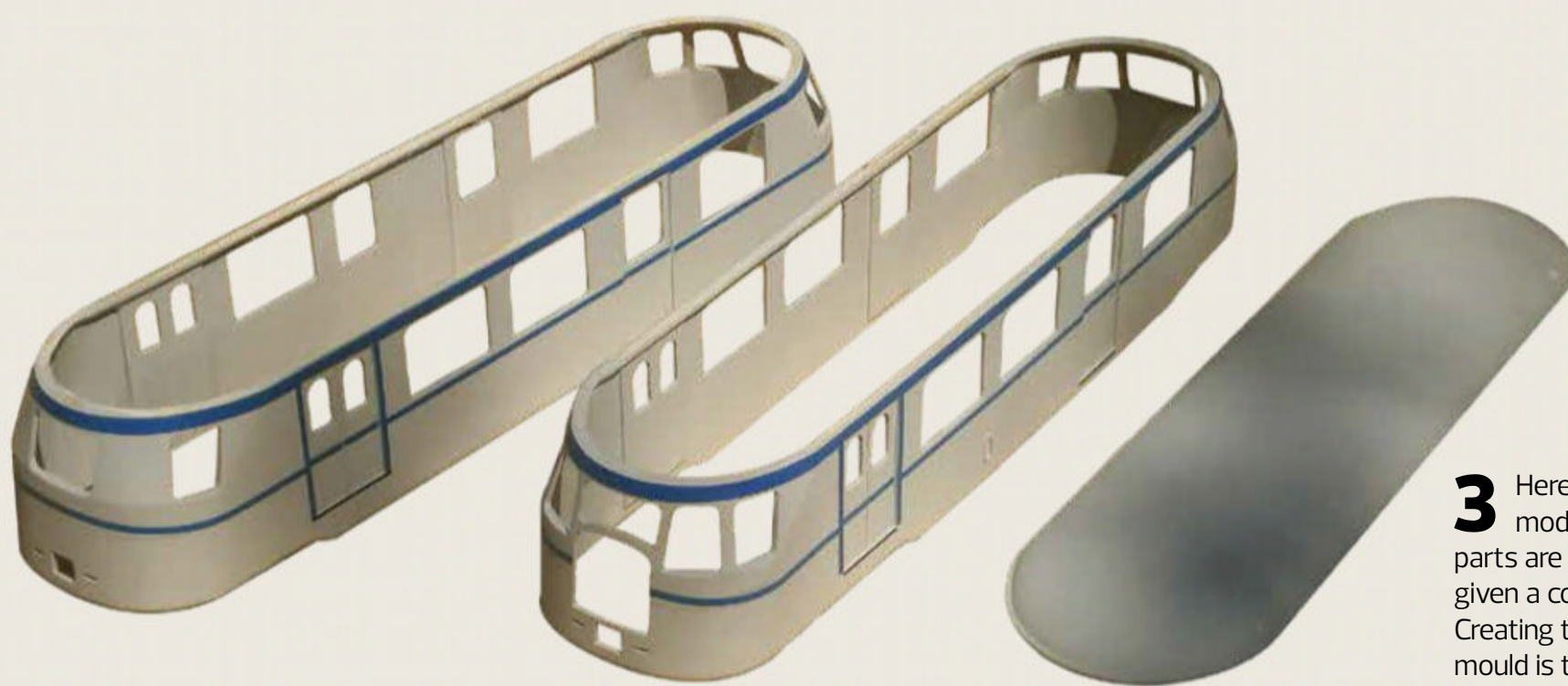


2 The first phase of the work, once the 3D design has been completed, consists in printing the panels. On this picture, the front of the railcar with its radiator. The curved parts of the roof are also 3D printed.

A TOUR ROUND THE GARDEN



1 In the heart of Ardèche, an A80 D railcar and an R210 trailer is climbing the gradients leading to the plateau.



3 Here are the master models. The various parts are assembled and given a coat of primer. Creating the silicone mould is the next step.

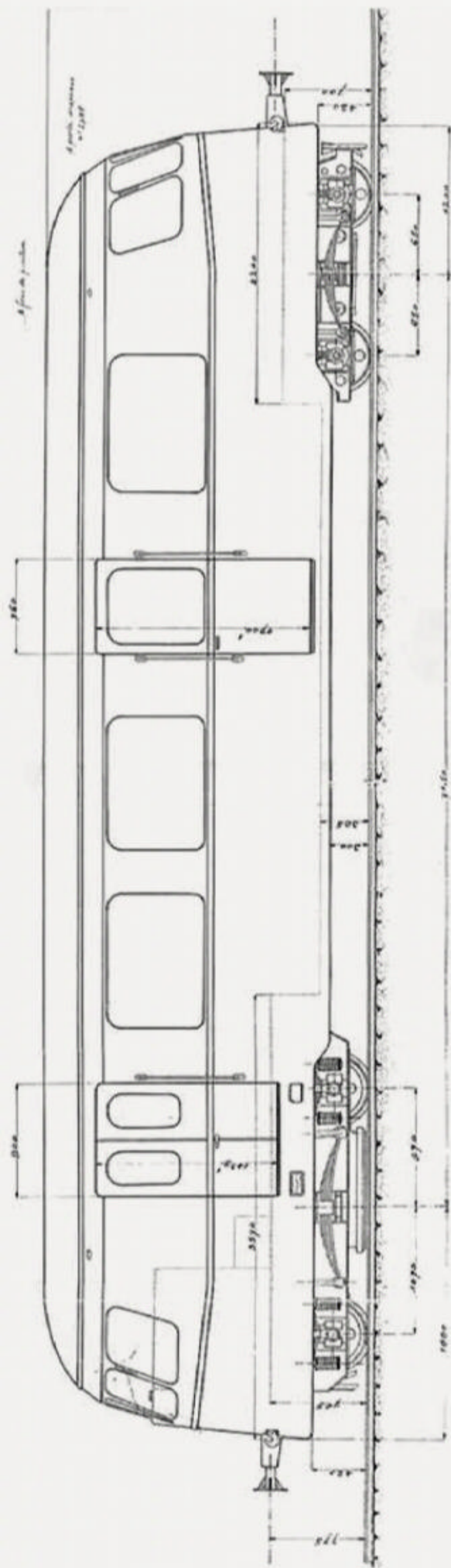
out of 2mm thick Perspex. The various elements were glued together. After sanding the seams, the bodies were given a coat of car body primer. Careful sanding leads to a perfectly smooth surface. At this point, the various details are glued on: seam covers and body strip, the strip below the roof, the seam covers around

the doors, and the strip around the fuel tank filler top.

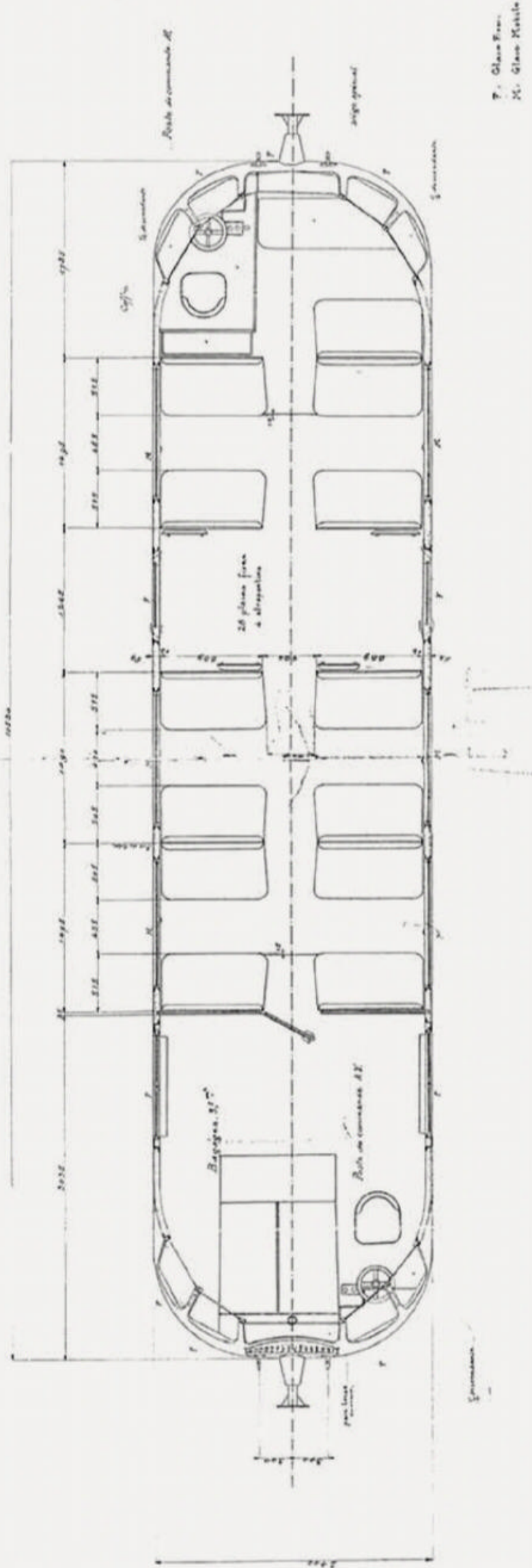
The roof, which is identical on the railcar and the trailer, is also 3D drawn and printed. A shoulder ensures its proper positioning and a perfect fit. The details that differ between the railcar and the trailer are added afterwards. ■■■

AUTOMOTRICE - A 80D -

Echelle 1/20



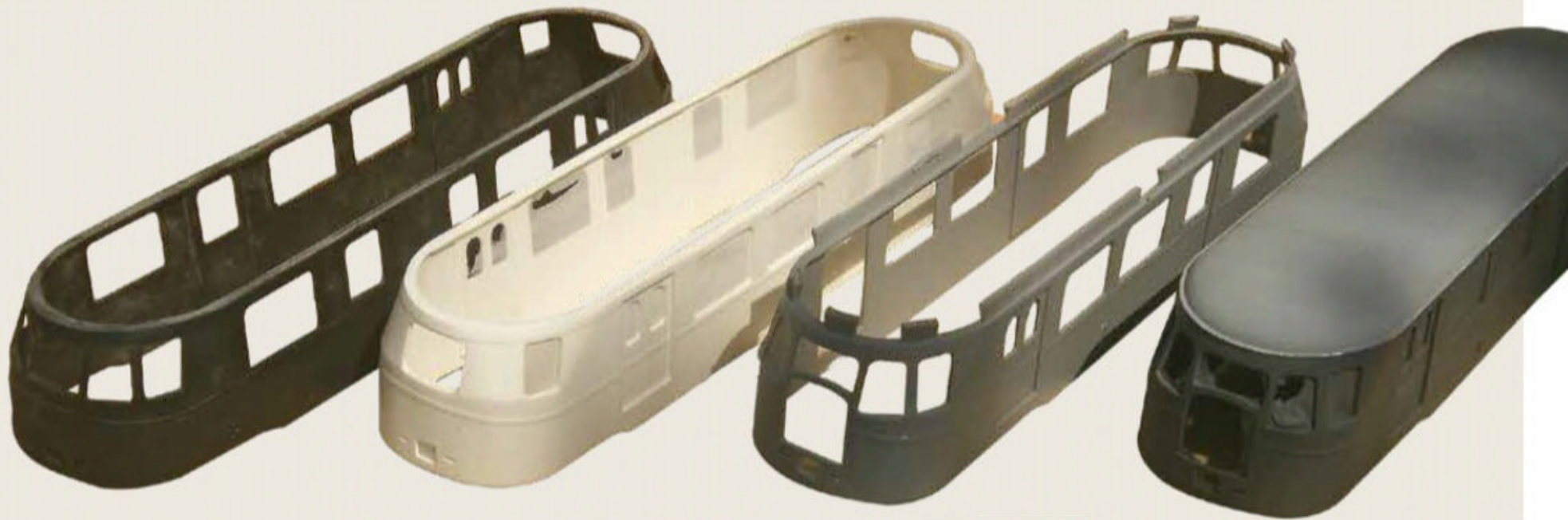
Elevation



Plan

Wide-bodied Billard
A80 D railcar

P. Glasse-Ferron
M. Glasse-Mohr



4 First castings: on the white body, note that the windows have not yet been opened up, and on the grey body the casting air vents that are still in place.



Casting

Once both bodies and the roof are ready, they are moulded using a standard silicone for polyurethane resin castings. Casting in resin produces almost perfect bodies that require very little finishing work. All that is required is sawing off the gating, and the various air vents located above the top body seam. As the mold features an internal core, the windows are almost finished, all that is needed is to remove the very thin film, as thin as cigarette paper, that remains across them. The various apertures and drilling points being included on the master model, the final job consists in drilling them out with bits of the right diameter.

Small parts

The window frames, handrails, horns, silencer, lamps, tank filler cap, bogie frames, coupling loops and brake hoses are made out of a variety of materials chosen for their specific qualities and their surface condition. They are all cast in a silicone high temperature centrifugal mould for casting white metal, whose melting point is 245° C. ...



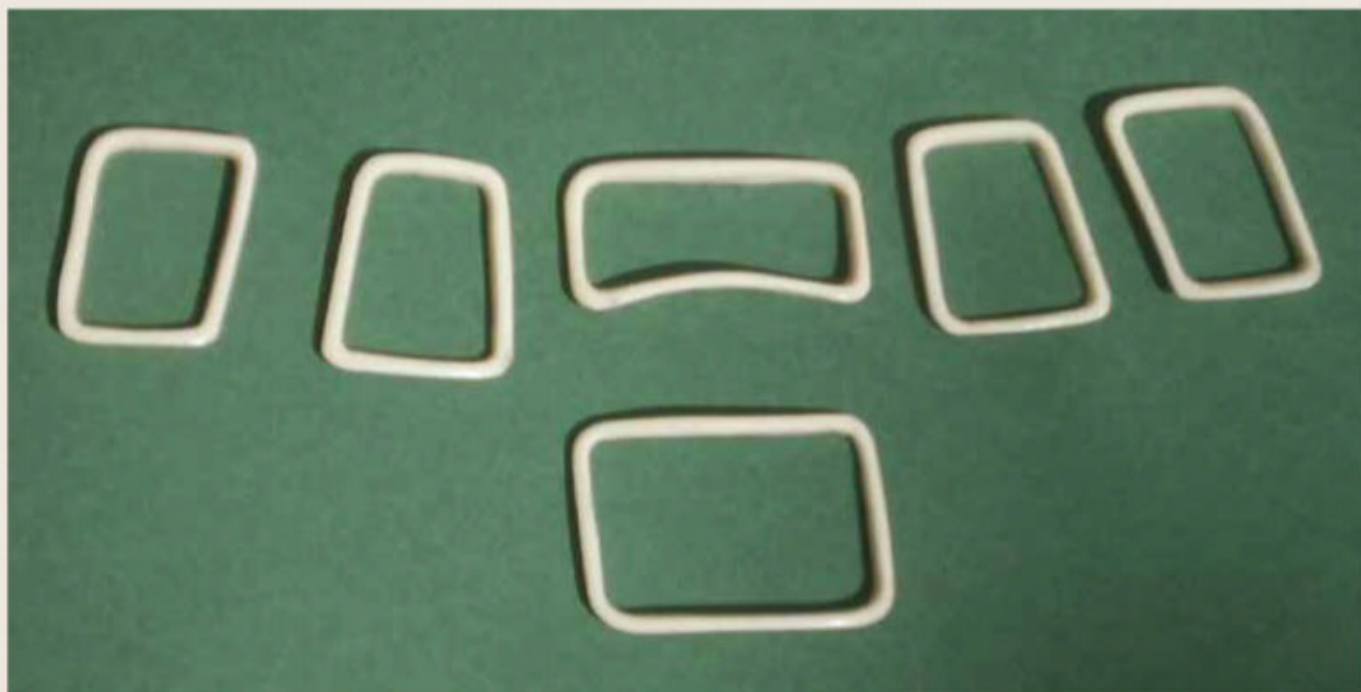
5 A railcar and its trailer, almost ready! The air vents on the railcar body must still be removed and plenty of finishing work remains!



6 The roof is shouldered to ensure it fits accurately into the upper part of the body.

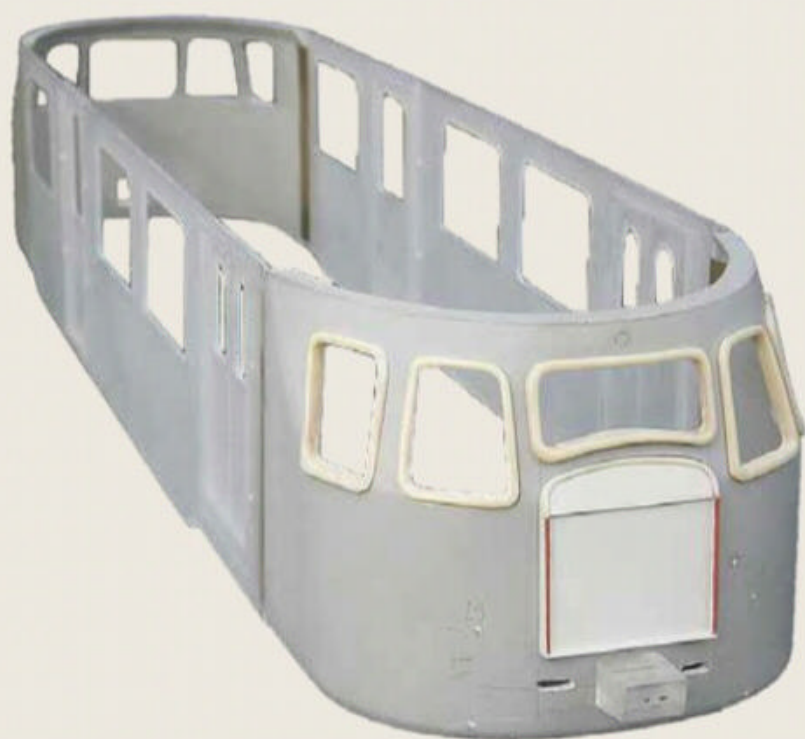
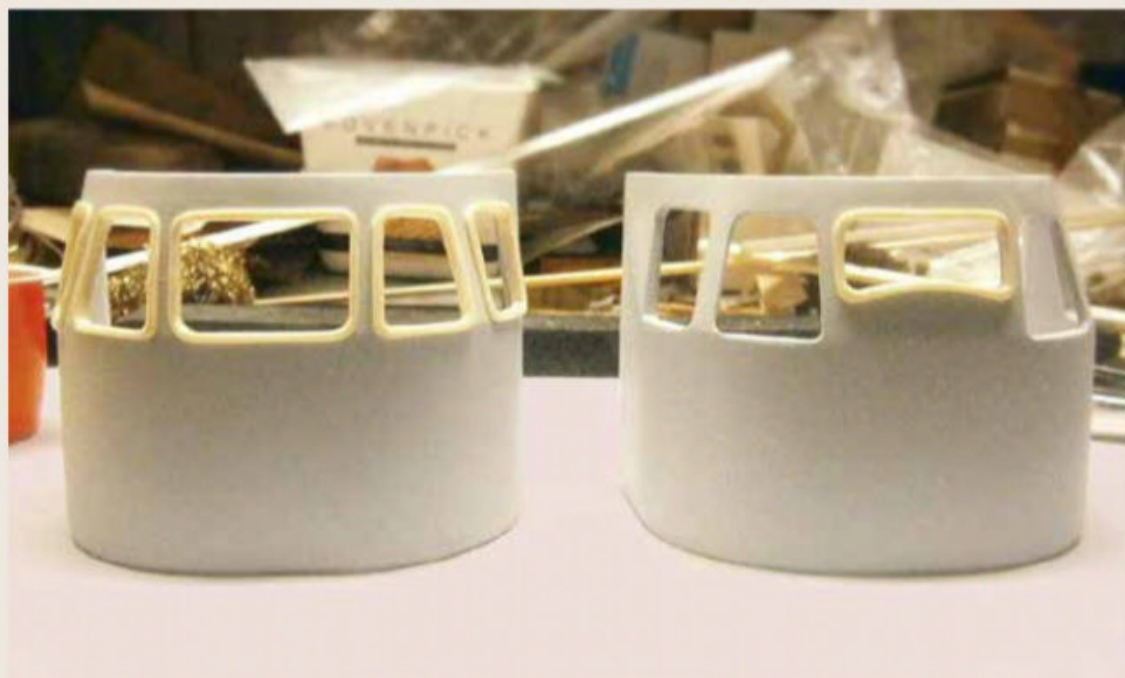
7

The master models of the window frames are fabricated separately.



8

The frames are fitted onto the 3D printed body ends.



9

Here is the master model for the railcar body. Note the machined sides and the markings for the drilling points. The master models of the radiator, the window frames and the central buffer are fitted onto it.

Finishing the bodies

Before final assembly, the bodies are given a coat of primer, and painted. The inside green paint is applied first. As was the case in the 1969–2008 period, a coat of RAL 9001 cream is applied first to the outside, followed, after masking, by a coat of RAL 3016 coral red on the lower part of the bodies and the strip below the roof. The roof is painted in RAL 9006 silver-grey. For the contemporary period, or for the historical CFD livery, select a RAL 7035 light grey for the body and roof and RAL 2002 blood orange for the lower half of the body. The window frames are carefully adjusted, painted silver grey and glued in place. The glazing, machined out of 2mm thick Perspex, is shouldered to ensure perfect positioning and glued from the inside. The couplings and buffers are fixed directly to the inside floor, made of brass, to avoid any risk of the paint getting chipped in the event of a collision. The CFV logos, numbers and builder's plates are drawn in 2D with my drawing software and etched onto a 0.2mm thick sheet of nickel silver. The seats are polyurethane castings, and the roof is held onto the body with neodymium magnets, easing access to the inside. ■■■



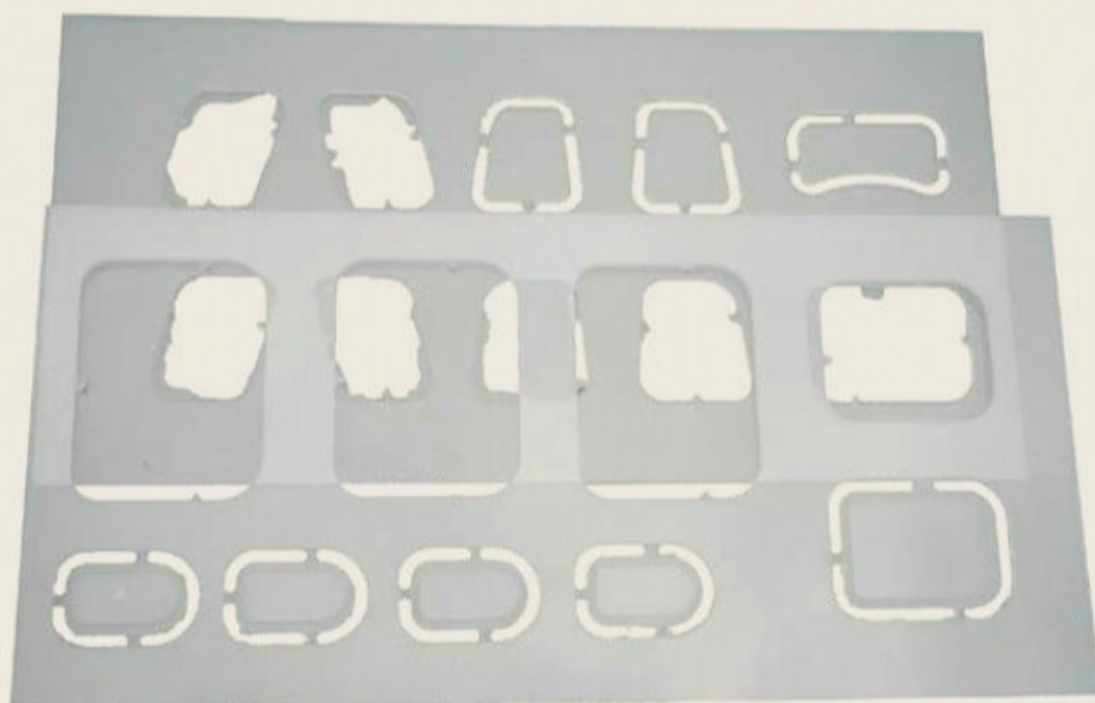
10 Master models of the bogie cross-beams, the coupling hooks and the buffers.



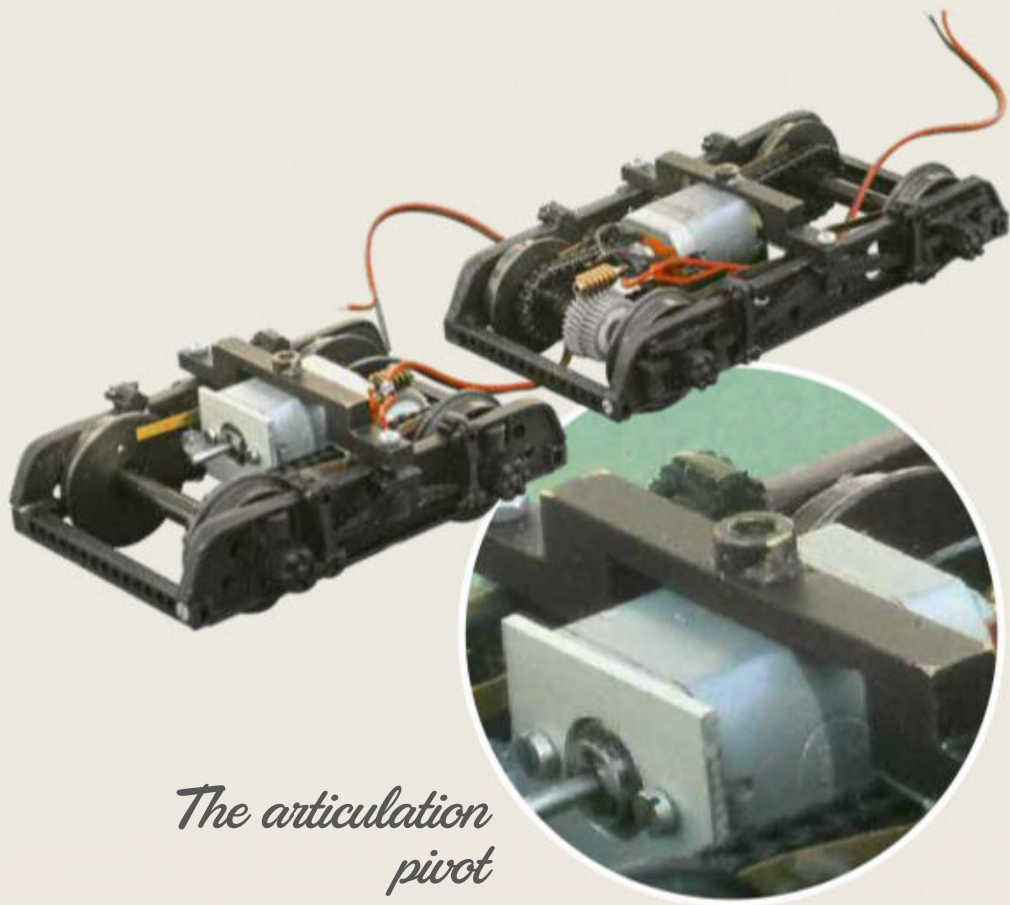
11 A high temperature silicone mould will be used casting the various detailing parts as well as the bogie frames.



12 Two white metal frames, for the railcar windscreen on the radiator side.

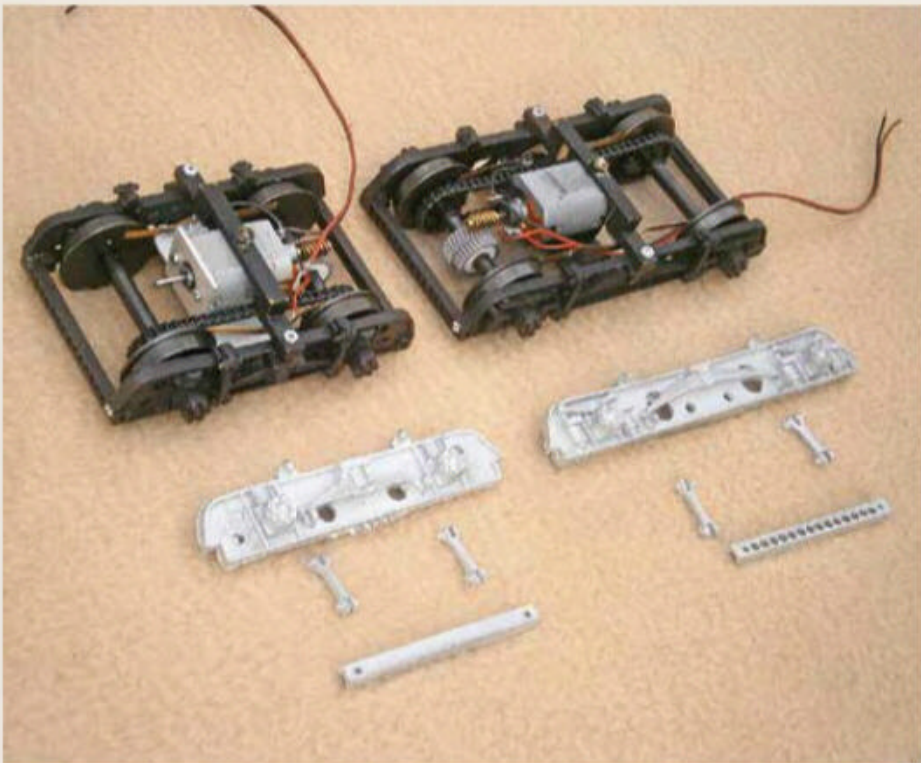


13 The glazing is machined out of 2mm thick Perspex. Note the shouldering that will fit inside the body.

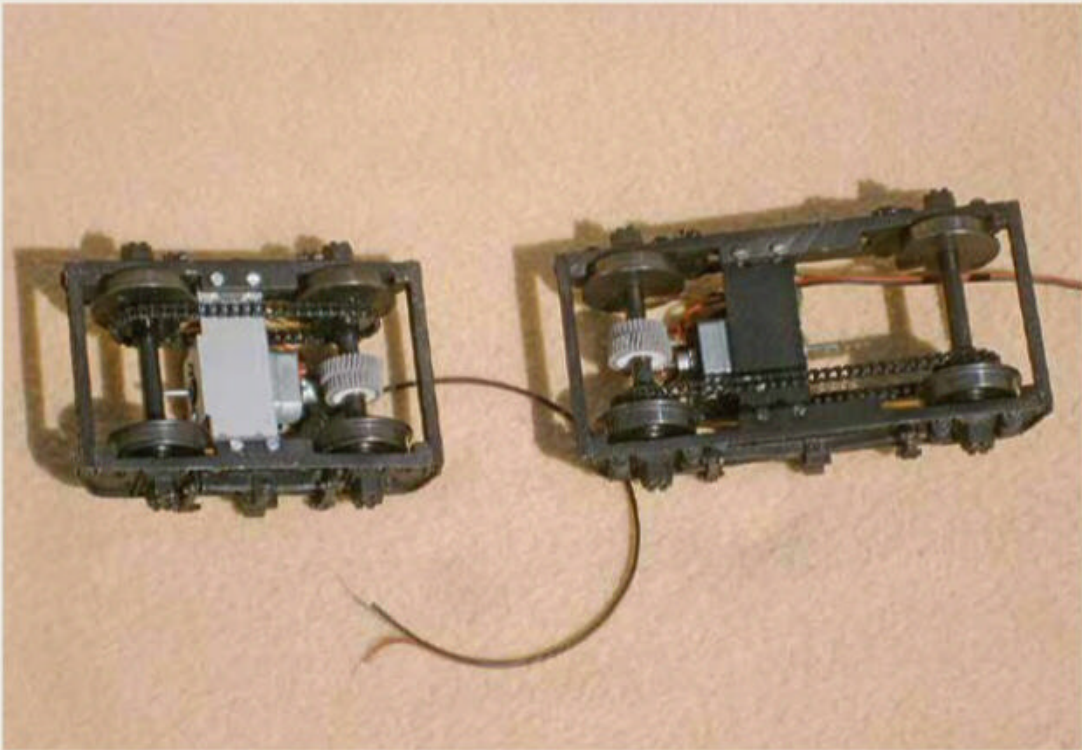


*The articulation
pivot*

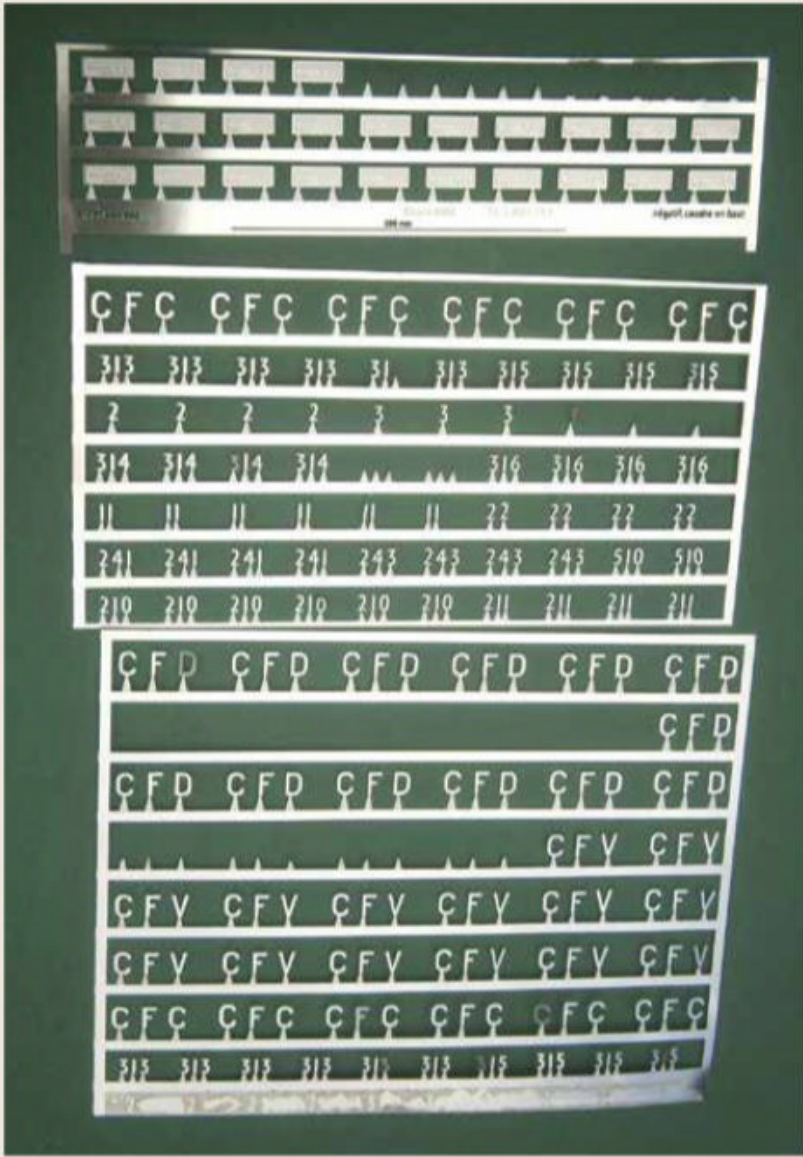
14 The two bogies of the railcar.
The pick-up wipers are visible, as well as
the articulation pivot on the central cross-beam.



15 The bogie frames are white metal castings, the
axleboxes are fitted with roller bearings. The tie-rods
of the suspension springs are added parts, for better realism.
The motors are supported by an insulating plastic cradle.



16 The free axle is driven by a chain.



17
The plates, logos and
numbers are etched
nickel silver parts.

Driving bogies

On the prototype, the motor is carried on the longer of the two bogies, the other one being a simple carrying bogie. On my model, both bogies are motorized. On each of them, a Bühler motor drives one axle via a worm gear and a straight gear. The traction power is transferred to the other axle by a chain. The motor rests on a cross-beam which also carries the white metal bogie frames, fitted with roller bearings for the axle journals.

Out on the line

Railcar and trailer are each 490mm long, 112mm wide and 110mm high. The railcar weighs 2kg and the trailer 1.6kg. The railcar hauls its trailer up 12 % gradients, normally found only on rack railways! The white front LED lights and the red rear one are directional. The set was able to enjoy a good run in natural scenery, on the large outdoor Ardèche Miniature layout at Soyons. ■



18 The Billard railcar and its trailer on the Ardèche Miniature layout.

Just like the real thing!

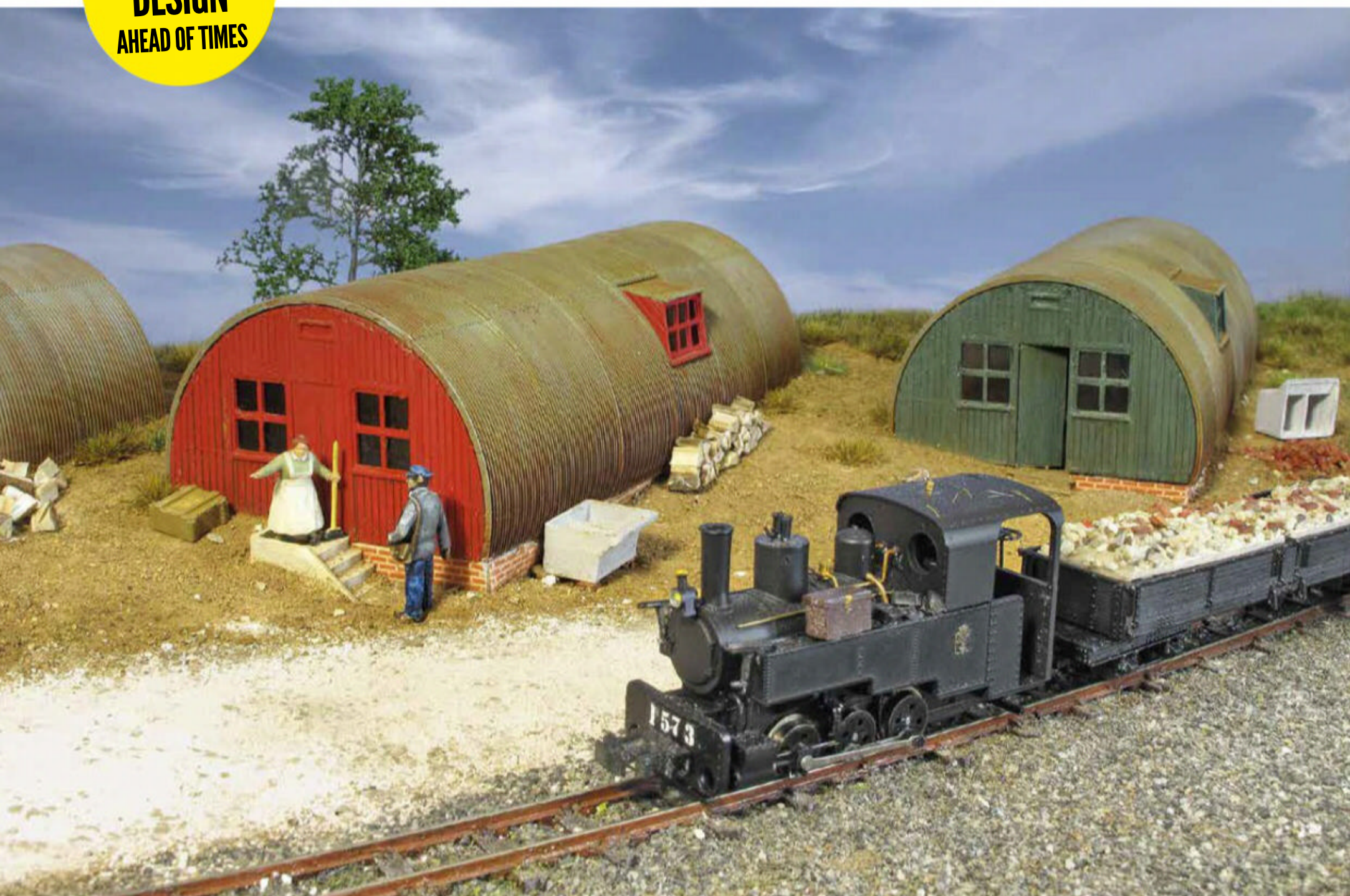


Nissen huts *for Quittancourt*

Continuing his evocation of the French post-WWI liberated regions, Eric Fresné decided to model an area of temporary housing. To do so, he opted to build British structures that are typical of the Great War: Nissen huts!

Text and illustrations (unless otherwise mentioned): **Éric Fresné**

**MODULAR
DESIGN
AHEAD OF TIMES**



"Let me tell you one thing, Monsieur Nicot, better a small place of your own than a large place in someone's else's house". At Quittancourt, like most places on the former front line, temporary housing is everywhere, accommodating the population having returned to its ruined villages.

The construction of my Quittancourt layout having been motivated by a determination to return to modelling after a long period of forced inactivity, I must admit that wanting to get back into things as fast as possible was somewhat detrimental to planning. The trackplan and the relief were reworked several times. Some areas were decorated hurriedly, while waiting to do better at a later stage. Such was the case for the embankment located behind the depot. I had simply applied a mat of wild grass with some brush. And as Quittancourt was rather lacking in buildings, I decided to redesign this area by creating a bit of a village. To remain within the context of my layout - the reconstruction of war-torn regions - I opted for a group of temporary dwellings.

MILITARY HUTS

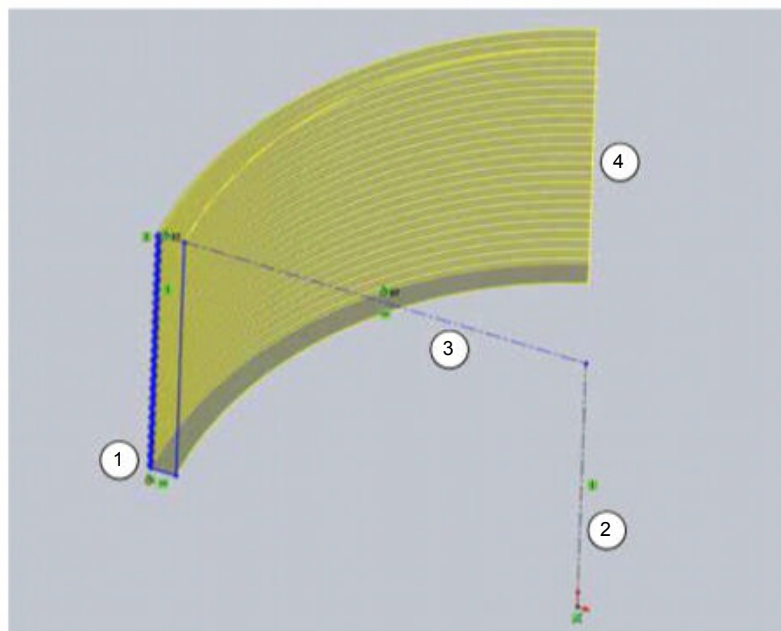
Period documents show a wide variety of temporary buildings, ranging from partly repaired ruins to entire

cities of wooden houses, as well as the recycling of military constructions. Amongst these, I was greatly attracted to the British Nissen huts! With their typical appearance, modest dimensions and modular structure, they were a perfect modelling project.

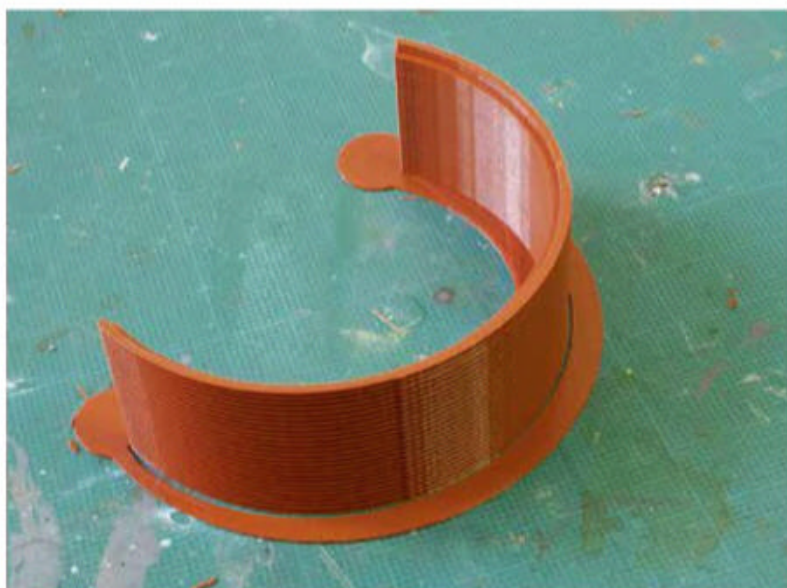
The features of the prototype enabled me to easily envisage making several of them on a restricted surface while remaining realistic. 3D design and printing were very helpful. I drew a full kit including several types of sections and facades. Printed on demand, the components allowed me to build three huts, each slightly different. A basic wire 3D printer, provided it can print 0.1mm thick layers, can produce scale and perfectly neat corrugated sheet metal. What remains simply consists in painting, weathering and scenic work.



1 Quittancourt year zero... the scenery in the background of the depot has been treated very hastily. It deserves something far better!



2 Consisting of curved sections of sheet metal and all identical, a Nissen hut is well suited to 3D design and printing, using parametric software (SolidWorks, Freecad...). A part with a constant radius will be defined by its cross-section and its rotation axis, separated by a distance equal to the curve radius. The revolution function determines the angular length of the sheet metal.



3 A segment of a 16 foot hut consists of three pieces of sheet metal of identical length. The central section fits over the two others. My segments were printed with a "skirt" designed to prevent any ungluing during the printing process. I drew it so as to leave the sheet metal corrugations free, to obtain a better appearance at the joints between segments.



4 A complete hut comprises 3 types of segments. The simple segments are the most numerous. The ends feature a rabbet into which the wood facades will slot. The segments with windows feature an aperture, into which the window frame and window are fitted. Printing the segments separately makes it possible to vary the architecture of the huts, in a prototypical way.

MAIDS OF ALL WORK

When position warfare set in, accommodation for troops behind the front line became a constant worry for the general staff. From 1915, the large offensives that concentrated hundreds of thousands of soldiers along narrow parts of the front made the problem worse. In an industrial war, the answer logically had to be industrial. It consisted in designing and producing standardized and modular structures, easy to transport and to install depending on what the armies needed. Each warring party adopted its own solution.

In France, it was Louis Adrian, a graduate of the Polytechnique elite engineering school, and a military quartermaster, who got down to designing large wooden buildings: the famous Adrian huts. The principle was simple: such a hut consisted of frames covered with panels. The parts were prefabricated in workshops and assembled on site. Depending on how they were furnished, they could be used as barracks, storage buildings or stables.

In the U.K., it was also an engineer who put his mind to the design of temporary buildings, Major Peter Nissen. Here again, the aim was to have something modular and easy to build. Nissen opted for an arc-shaped metal framework, with a corrugated sheet metal cladding. The Nissen hut was available in 3 diameters (16, 24 or 30 feet) and could be used in the same way as the French huts. At the end of the war, many of these buildings enjoyed a second life in the civilian world as dwellings or commercial structures, and saw many other uses.



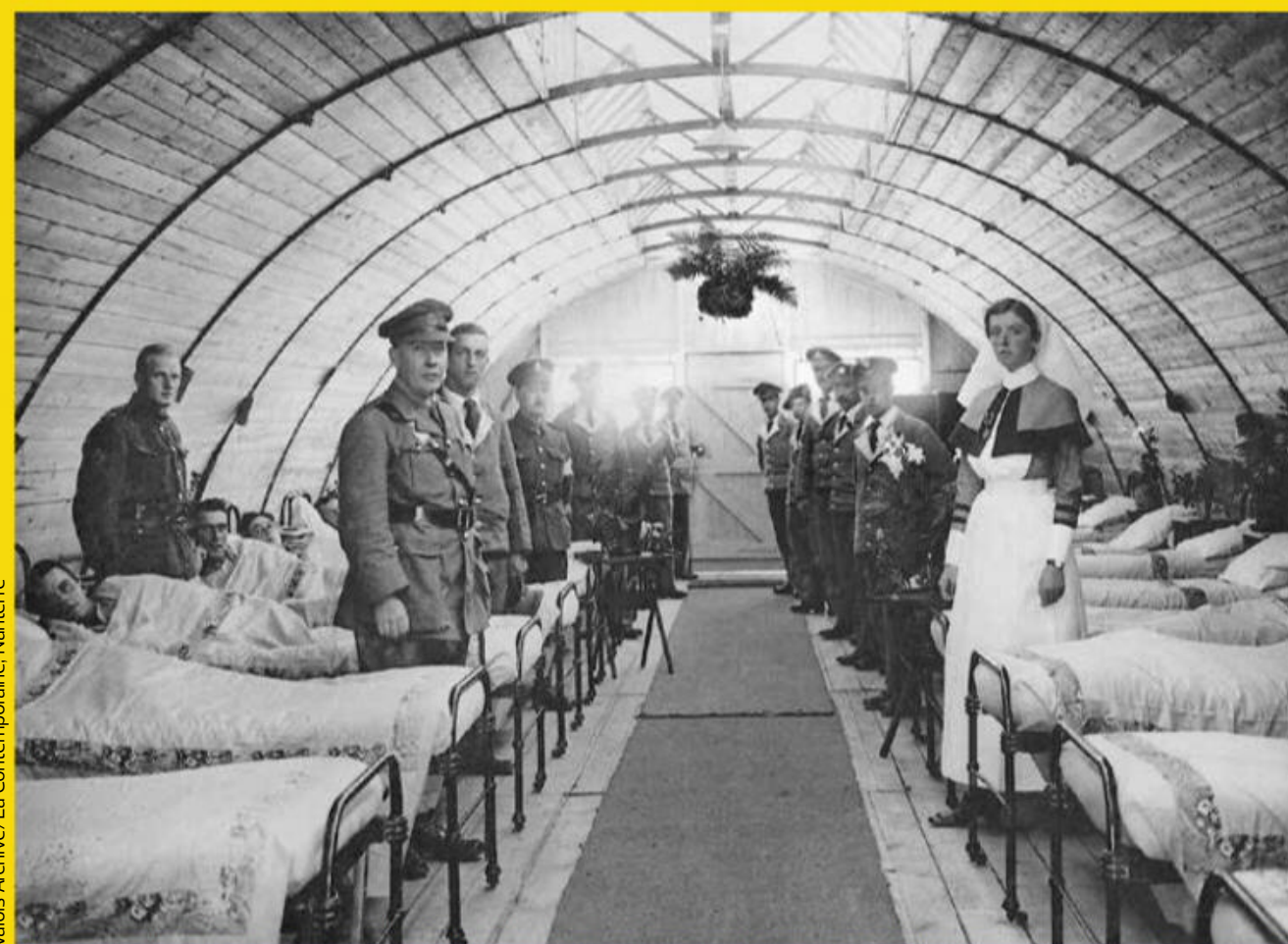
Valois Archive/La Contemporaine, Nanterre

When it came to temporary buildings, the French Army opted for wood, with the famous Adrian hut.



Valois Archive/La Contemporaine, Nanterre

Mass-produced from 1916, the corrugated sheet metal Nissen huts were designed to provide proper shelter to the thousands of British soldiers present on the front.



Valois Archive/La Contemporaine, Nanterre

This 24 foot Nissen hut with a window was used as a hospital ward at Hesdin (Pas-de-Calais) in June 1917. The wainscoting applied to the inside of the sheet metal provided some insulation to the injured. Note the cast iron beds and the flowered countepanes.



*Plan,
H0 scale.*



5 Simply apply a 3D pen to the back of the joints between the parts. The pen melts the plastic on either side of the joint. The parts are solidly welded together.



6 The sheet metal parts of the huts are given a first coat of rust-coloured Tamiya primer (ref. 87160).

*Besides gluing,
PLA parts
can also be
assembled by
welding.*



7 With a brush, and following the corrugations, I then apply a coat of Prince August light grey blue (ref.905/156), slightly thinned. The grey paint must not completely cover the primer. The rusty shade must appear through the grey coat.



8 I apply plenty of Vallejo rust wash (ref.76506). Working above a jar means that the wash dribbling off the sheet metal is not lost.

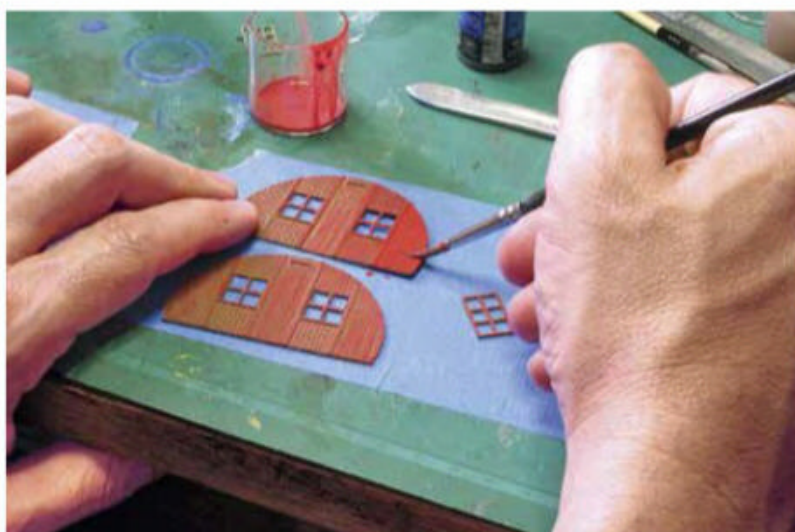
*Even though it
seems that Nissen
huts used to rust
very quickly, as
shown on post-
war photographs,
I decided to
weather my own
huts moderately.*



9 Once dry, the wash has concentrated in quite a realistic way along the bottom of the sheet metal, except below the window which has protected that part from the runoff.



10 The wood facades are treated separately. They are given a coat of grey Tamiya primer (ref. 87064) followed by a brush of Vallejo Panzer Aces "old wood" (ref. 70310).



11 The final shade on the facades consists in applying washes of acrylic paint with increasing amounts of white blended in. Five or six coats are applied. This method, suggested to me by François Fontana, preserves a certain degree of transparency and leaves the underlying work on the old wood shade visible.



12 The huts must now be integrated into the environment. The embankment behind the depot was stripped. The place of each hut was coarsely marked and cut out with a scalpel. Having used cardboard or Styrofoam for the relief made this job considerably easier.

The autochromes from the Albert Kahn collection show temporary dwellings painted in bright colours.



13 Each hut was installed on a foamboard base clad with Redutex bricks (ref. R087LV112). To add some variety and remain close to the ground, none of the bases are the same height.



14 My 3 Nissen huts are in place. Each has a small 3D printed staircase, suited to the height of the base. This may seem strange, but differing colours on the facades was observed in reality.



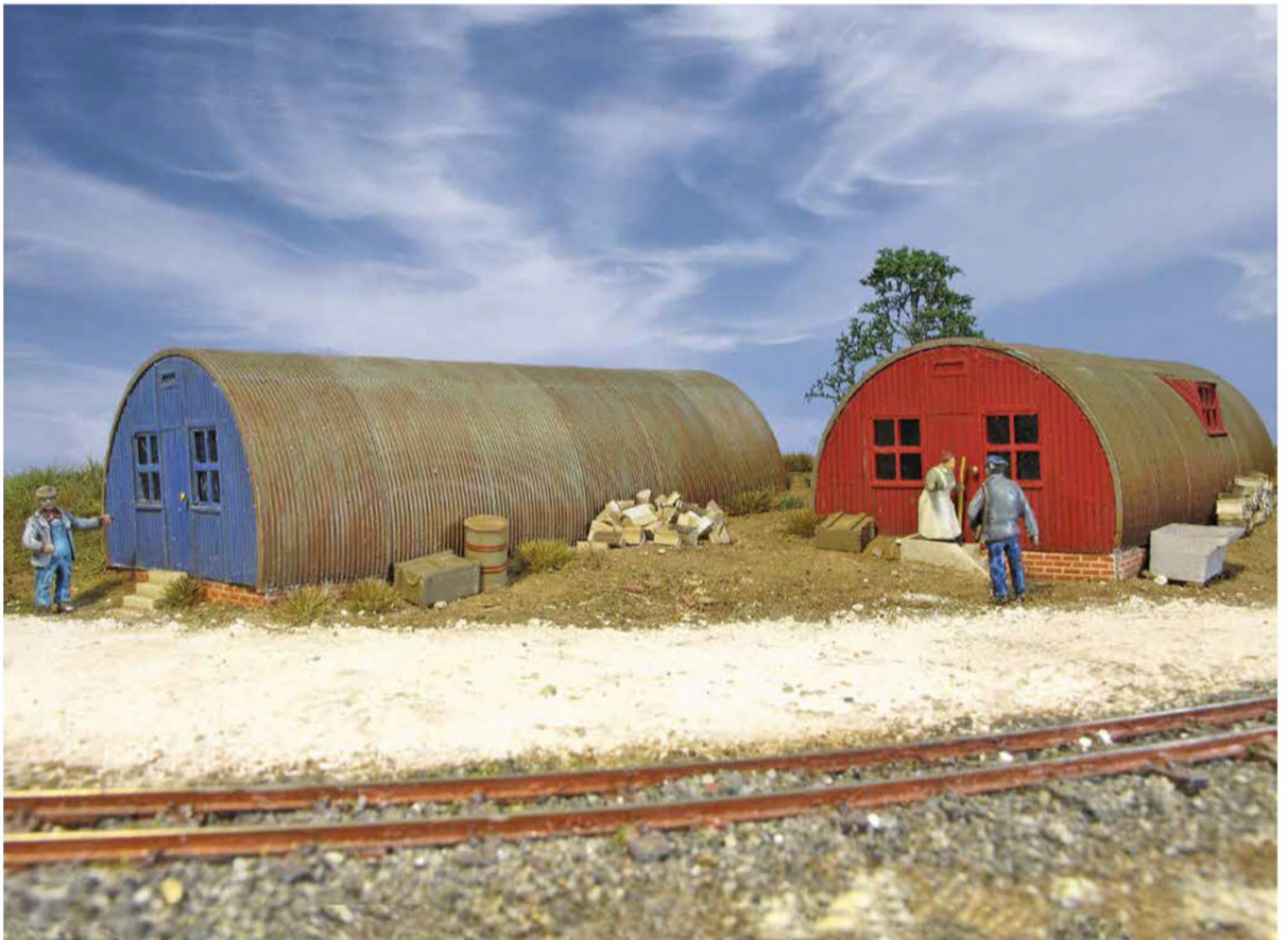
15 Some sifted earth is sprinkled around the huts on a coat of glue.

TO FIND OUT MORE

Watch the construction of a Nissen hut with this Imperial War Museum (London) film: <https://www.youtube.com/watch?v=JHPkOQEFv18>.



16 Integrating the Nissen huts is completed by adding some vegetation and a few scenic items such as bricks, cut wood, barrels, crates and 3D printed washing tubs.



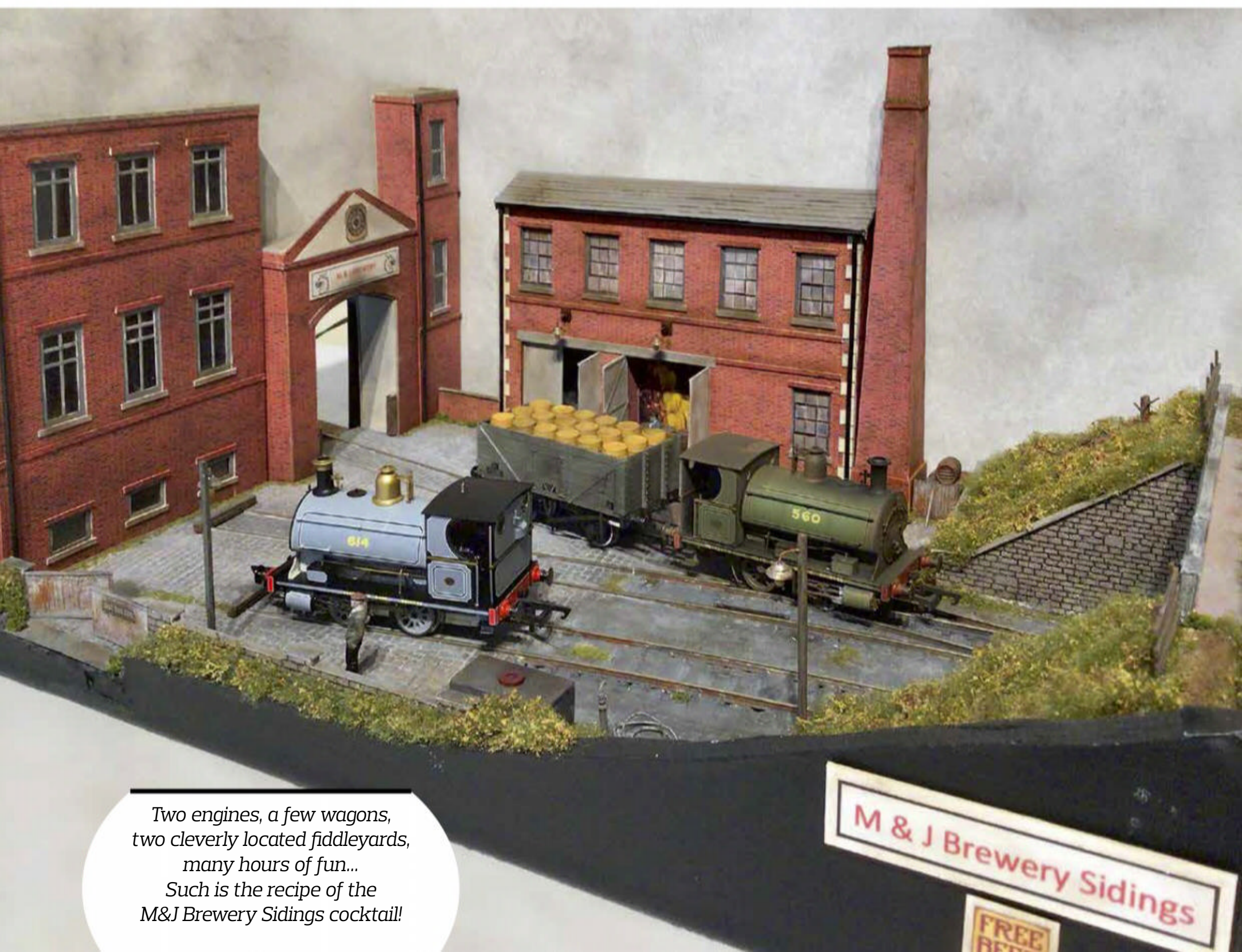
M & J Brewery Sidings

Lockdown proved helpful in encouraging railway modelling. Here is yet another example: Mike Pottage's delightful M&J Brewery Sidings, a standard gauge micro-layout in 00 scale. A small industrial dream come true!

Text and illustrations: Mike Pottage

François Fontana: Hello Mike, here is a fine layout, small but packed with charm. Can you tell us how it happened?

Mike Pottage: in the field of railway modelling, I am a beginner, and have been working on a fixed layout for the past 5 years. Previously, all I had was a simple oval of track in my childhood. During lockdown, I decided to build a box layout in 00, working



*Two engines, a few wagons,
two cleverly located fiddleyards,
many hours of fun...*

*Such is the recipe of the
M&J Brewery Sidings cocktail!*

The layout at a glance

Scale: 00 (1/76)

Gauge: 16.5mm

Peco track code 100

Control: digital

Dimensions: one A4 format archive box

on it whenever I had time. I wanted to experiment with various techniques while being able to shunt a few wagons around with small industrial locomotives.

FF: The trackplan is fairly simple?

MP: It fits into an A4 format archive box.

A single turnout gives access to one siding at the rear, and is operated manually. ■■■

On the right-hand side, under the bridge, the exit to one of the fiddleyards: a sector plate serves both tracks. The figures are from the Dapol range and have been repainted.



Motive power and rolling stock

The locomotives are Peckett 0-4-0 saddle tanks, from the Hornby range, they reproduce industrial prototypes of which some 1.500 units were built by Thomas Peckett & Sons, and were widespread in Africa, South America, the Middle-East and

Australia. One of them has been restored, while the other one is waiting to be. I would like to add a Peckett 0-6-0 saddle tank to this pair. The seven-plank open wagons are from the Oxford Rail range, and for variety, I also run a few box vans.

■ ■ ■ Two small fiddleyards allow for shunting; one is located inside the brewery, and is accessible through the doors of the building. On the opposite side, the other fiddleyard is located beyond a concrete overbridge. This second fiddleyard gives access to the short siding located in the foreground. The layout can be completely dismantled and everything fits into the archive box, except the backdrop which is too large. The trains are operated digitally.

FF: The buildings are all collapsable, actually, they are just backscenes...

MP: They are in low relief, whose strong card structure is clad in brick printed paper. The painted card ornamental elements are added afterwards. A photo of the inside of a brewery gives some depth to the building at the back, whose doors are open. The woodwork consists of self-adhesive



Via the brewery doors, trains reach the second fiddleyard.

paper glued onto transparent plastic sheet, I printed photos of grubby window panes which are fitted behind. The lamp posts are recycled plastic kit sprues, while the shades are from Ratio kits.

FF: The ground reproduces what is found in industrial facilities?

MP: The paving stones are injected plastic sheets from the Ratio range. The base colour was applied with a spray can, while a few touches of acrylic paint and some pastel weathering complete the job. The ballast is a blend of oven-dried sand and air-drying modelling clay. Once dry, this coating is painted and weathered. The embankments are sculpted out of polystyrene, covered with flocked mats, electrostatic grass and fine flock materials. I used a little zeechium and even some kitchen spices from my wife's cupboards. ■



The entire layout fits into the archive box!

N° 614 is in pristine condition, while 560 is still expecting a new coat of paint!



A tarred canvas **ROOF**

To vary the appearance of his roofs, Gilbert Gribi often covers them with strips of tarred canvas. He shows us here how to proceed.

Text and illustrations: **Gilbert Gribi**

**A CANVAS
ROOF**



A lightweight roof, covered with tarred canvas, for the gasoline seller's lean-to, on Gilbert's American diorama.

In the past, I used strips of the adhesive masking paper used by car body painters, painted black, to evoke the strips of tar- or bitumen-covered canvas used for the roofs of my 0 scale buildings. More recently, I adopted a completely different technique, based on paper tissues, which enables me to let the boarding appear under a few torn areas.

MATERIALS REQUIRED

Paper tissues
Black acrylic paint
Wood glue



1 I begin by cutting off the embossed strip around the tissue and separating the different layers of tissue. I cut out strips ca. 3cm wide. At one end, I glue a small piece of cardboard that will serve as a handle.



The purpose of the cardboard handle is to easily remove the strips. But don't let the paint dry!

2 The strips are painted with Tamiya XF-1 matt black, on a sheet of card to support the work. This is delicate work, the strips are fragile and tend to get stuck to the card, this is where the handle helps to remove them. But do not wait for the paint to dry out! To ensure that the strips are sufficiently sturdy, at least 3 to 4 coats of paint are required, on both sides.



3 Once the paint has dried thoroughly, I cut strips 18 to 22mm wide, using a scalpel. I use a strip of wood as a template, which acts as a ruler and saves me having to draw the outline of the strips and cut them with scissors.



A small board acts as a template and as a ruler.





4 My boarding consists of a surface of 1mm thick samba wood. The joints between the boards are engraved with a laser machine (the ideal solution) or with a dry point. I mark the the board joints with a 0.5mm mechanical pencil, then apply a first coat of oil paint to the wood, a blend of natural Sienna earth and natural umber. The surface is then weathered with various greys.



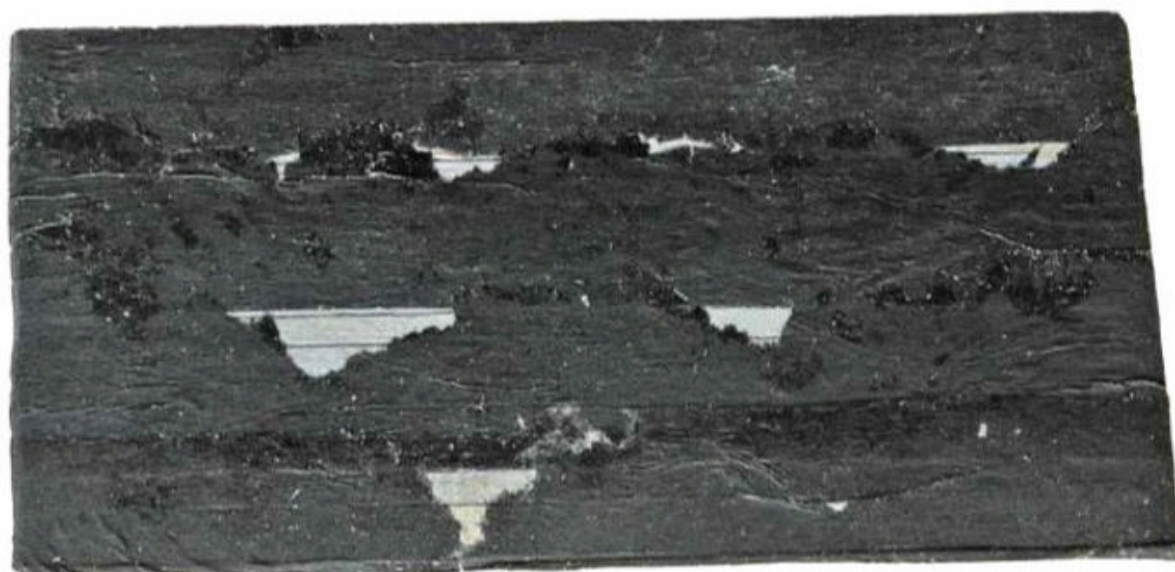
5 This may seem curious, but it is best to put the strips in place before fitting the boarding to the rafters. Using the lines in the boards to position it properly, I glue the first strip to the lower part of the roof. I use wood glue, applied with a paintbrush. The strips extends by 3 to 5mm beyond the three visible sides. Using a scalpel, I tear off a bit of tissue. I do likewise for the other strips.



6 A 1mm thick strip of wood applied to the boarding is used as a guide for the scalpel blade for cutting the outline of the tarred strips. Because of the dampness of the glue, the boarding warps a little, this is not a problem. Once dry and fixed to the rafters, it will revert to its original shape.

7

The small overlap is folded back and glued against the edge of the boarding. My roof, with its various accidents, can now be put into place on the rafters.





8 On real buildings, for obvious reasons related to the fire risk on a wood surface, the strips of tarred canvas cannot be heat-welded together. The joints are therefore glued cold. They are highlighted with a black Posca felt-tip.

9 The work is completed by fixing a few battens that hold the waterproofing strips. To weather the roof, I apply some grey/black pastels all over the surface.



CODE NAME KP4

The largest locomotive class ever built worldwide!

Let's not deny ourselves such a pleasure, this fine record is held by narrow gauge railways! So, let's take a trip from the USSR to China; billowing steam and the fragrance of hot oil are expecting us there, together with a steam locomotive with an impressive pedigree.

Text: **Vincent Lepais**

Photos (unless otherwise mentioned): **Didier Delattre**



The engine that will serve as a base for the future KP2 and C2 classes was born in 1930. The Kolomenski Zavod workshops, Russian locomotive builders since 1869, produced the 159 type. This four-axle locomotive was designed for 750mm gauge track, featured side tanks and a separate tender. It was superheated. The specifications restricted the axle load to 4 tons. One thousand units were produced until 1941.

That year, a more powerful version was released, known as P24. It was fitted with a larger boiler and improved superheating. It's larger mass required

a bigger tender, as the 4 ton axle load limit meant the side tanks had to be removed. Only 9 P24 units had been completed when the German invasion took place.

THE LARGE SERIES...

After the war, there was a huge requirement for narrow gauge rolling stock. Meanwhile, the P24 had been improved and was now designated PT4. Record production levels were reached, the engine being built in the USSR and in other countries, under licence. The figures speak for themselves, in Finland, Tempella and Lokomo built ...

24th March 2010,
C2s n° 7 and n°
10 are shunting at
the entrance to
Shibanxi depot.



PASSENGER SERVICE

0-8-0 C2 n° 10
emerges from the
Caiziba tunnel on its
way to Bagou on the
Shibanxi railway in
China, 25th March 2010.





Mifengyan on the Shibaxi railway, C2 n° 14 is running round its passenger train, 26th March 2013.



C2s n° 7 and n° 10 of Shibaxi depot are joined by n° 9.



On 25th March 2010, C2 n° 9 brings a coal train down to Shibaxi.

■■■ respectively 342 and 253 machines from 1946 to 1952, désignated PT4 and KF4. From 1947 to 1959, Vortinsk in the USSR manufactured ca. 2,300 locomotives désignated VP1, VP2and VP4. Škoda in Czechoslovakia took part in production with 424 units built from 1949 to 1952, under the KC4 denomination.

From 1950 to 1955, the Hungarian firm MÁVAG (Royal State Machine, Steelworks and Foundries Plant) produced some 240 engines of the KP4 type. Finally, 901 KP4 locomotives were built by Chrzanów in Poland from 1950 to 1959. Total number: 4,460 locomotives! Of course, the large number of builders entailed variations in details from one series to another. Some engines featured spark arresters, some did not. The other differences would require a more in-depth study relating to the assembly methods, the turbogenerators, the lamps, etc.

IN CHINA

In a first phase, part of the engines produced by par Škoda, MÁVAG and Chrzanów were shipped to China, before this country began building under licence around 1958. The Chinese KP4 types were varied, and displayed differences in construction. The most common denomination is C2. Total production is estimated to have been around 1,000

IN ESTONIA

**Drawing
in the central
folder**

In Estonia, restored 0-8-0
Ku4 n° 1.899, seen at the
museum depot of Lavassaare,
on 10th October 2019. The
locomotive is displayed
statically in the open.



units. Even with variations, more than 5,400 KP4 engines in all were built until 1988, demonstrating a very sound design, to the detriment, it must be said, of aesthetics...

TAKING A LOOK AROUND THE ENGINE

Let us start with the axles. These are massive castings, but with a diameter of 600mm only, they give the impression that the locomotive is mounted on castors! The driving axle is flangeless, to ease the handling of sharp curves. The generously dimensioned suspensions, combined on the front axles, could cope with hastily laid or well-worn track. The buffer height was adjustable. The buffer featured a horizontal balancing beam carrying the double coupling, a hook on one side and a weighted chain on the other. Some engines were also fitted with safety chains, also adjustable heightwise.

Locomotive and tender featured guard irons. The boiler carried the steam dome and sand-box enclosed in one single metal casing. The ■■■



At the Lavassaare Muramaa depot, in the early morning on 10th October 2019, 0-8-0 Ku4 n° 4.332 is ready to depart.



Following its journey and having run round its train in Lavassaare station, the engine returns tender first.

IN LITHUANIA



A KP4 0-8-0 preserved at the Klaipėda open-air museum in Lithuania.

Jacques Royan



Jacques Royan

Backhead of the KP4 0-8-0 preserved in the Anyksciai museum on the Panevėžys tourist railway.



IN CHINA



Coming from Huangcun, 0-8-0 C2 n° 16 rolls into Shixi station.



The engine is ready for its daily duties.

Back on the Shibaxi railway, under the rain.
On 25th March 2010, C2 n° 10 arrives in Caiziba amongst the rice fields.



■■■ whistle was fitted on the right hand side of the dome. The left hand side carried the valve working the outside pump, fixed on the step. This device increased the autonomy of the engine by allowing water to be taken on from rivers or springs, thanks to a hose and a strainer. The clack valves were next to the dome. A blowdown valve was located on the left hand side.

Depending on the versions, the turbogenerator and the safety valves could be of different types, the funnel likewise. The cab was built out of wood, with a metal cladding. The front windows could swivel, the side windows could be moved up and down. A small vent was located on the roof. The latter extended over the concertina connecting the engine to its tender. Remember that this locomotive worked in areas with very harsh winters.

The 6-wheeler tender also featured a shelter, with a brake column working on all 3 axles. The filler caps were located at the rear of the welded body, as well as the vent.

THE CHINESE ENGINES

The C2 class had extended cabs, a regulator operated from the side, and a connection between the steps and the front buffer beam. The main difference was that the 6-wheeler tender was often replaced by one fitted with bogies, offering greater capacity. Unfortunately, it has proved ■■■



On 3rd April 2021, C2 n° 004 takes on coal in its 6-wheeler tender at Huanan depot on the eponymous railway.

At the bottom of the Mifengyan switchback, 0-8-0 C2 n° 14 is seen heading a passenger consist.

■■■ impossible to find data about these tenders. Some locomotives were fitted with a Giesl exhaust, invented in 1951 by the eponymous Austrian engineer, which significantly increased the draught. Aesthetics suffered again with often unfortunate work carried out on some C2 engines, such as the addition of a second dome enclosing the funnel, or the stretching by 90° of the latter, all the way to

the cab, via two right angles giving it a “stovepipe” appearance. The various photographs of C2s show how sturdy these engines were, some remaining in service to this day despite makeshift repairs.

AN NOWADAYS?

KP4 and C2 engines have been preserved by museums or heritage railways across the world. The Ffestiniog Railway bought a C2 and shipped it back to the UK in 2007. Given the loading gauge of the line and the condition of the locomotive, an external reconstruction is planned, the engine being in working order at the time it was purchased. It is likely it will become an 0-8-0T, with a very different outline compared to what it was originally.

Voie Libre simply had to pay tribute to this pleasing puffer! It is the very essence of the narrow gauge industrial locomotive. It has served in pretty much all types of activity, from coal mines to cement plants. If you are on the lookout for an original, chunky locomotive, with ample potential for modifications through your own “makeshift repairs”, or to model or even invent one of its many versions, the KP4 – C2 is made for you, and as none are available on the market: grab your tools!



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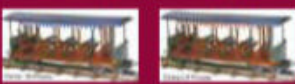
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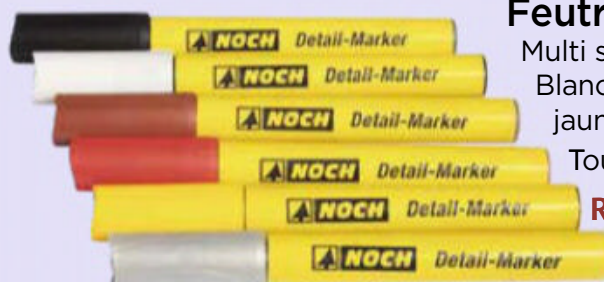


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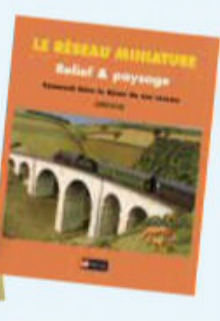
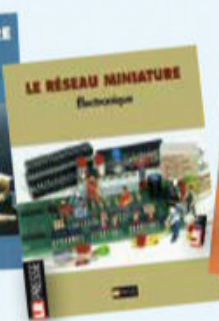


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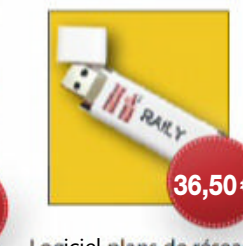
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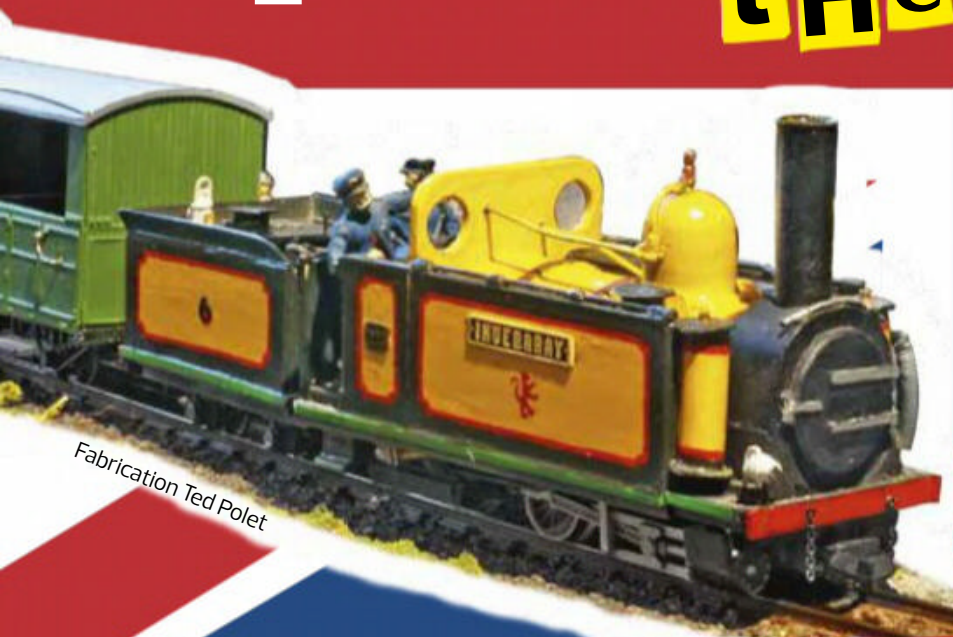
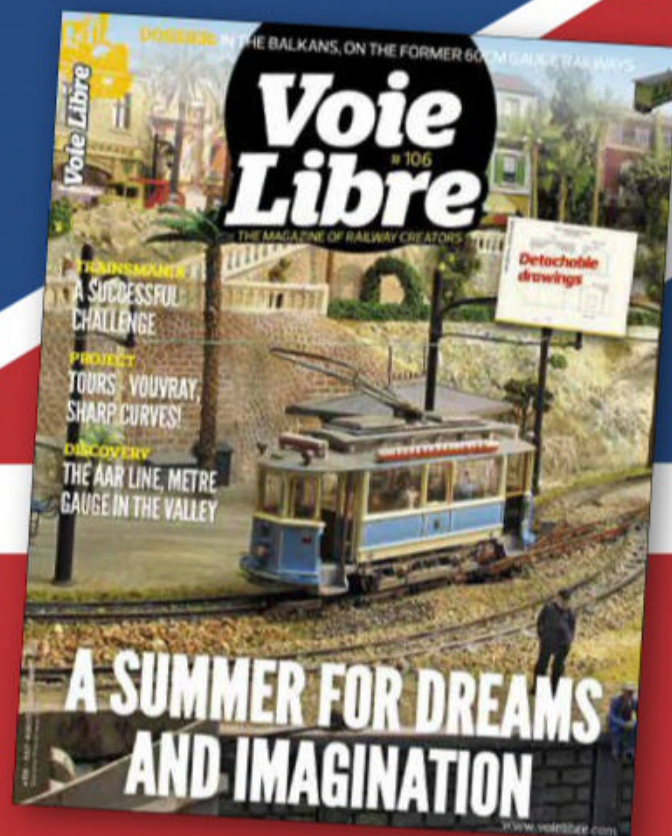
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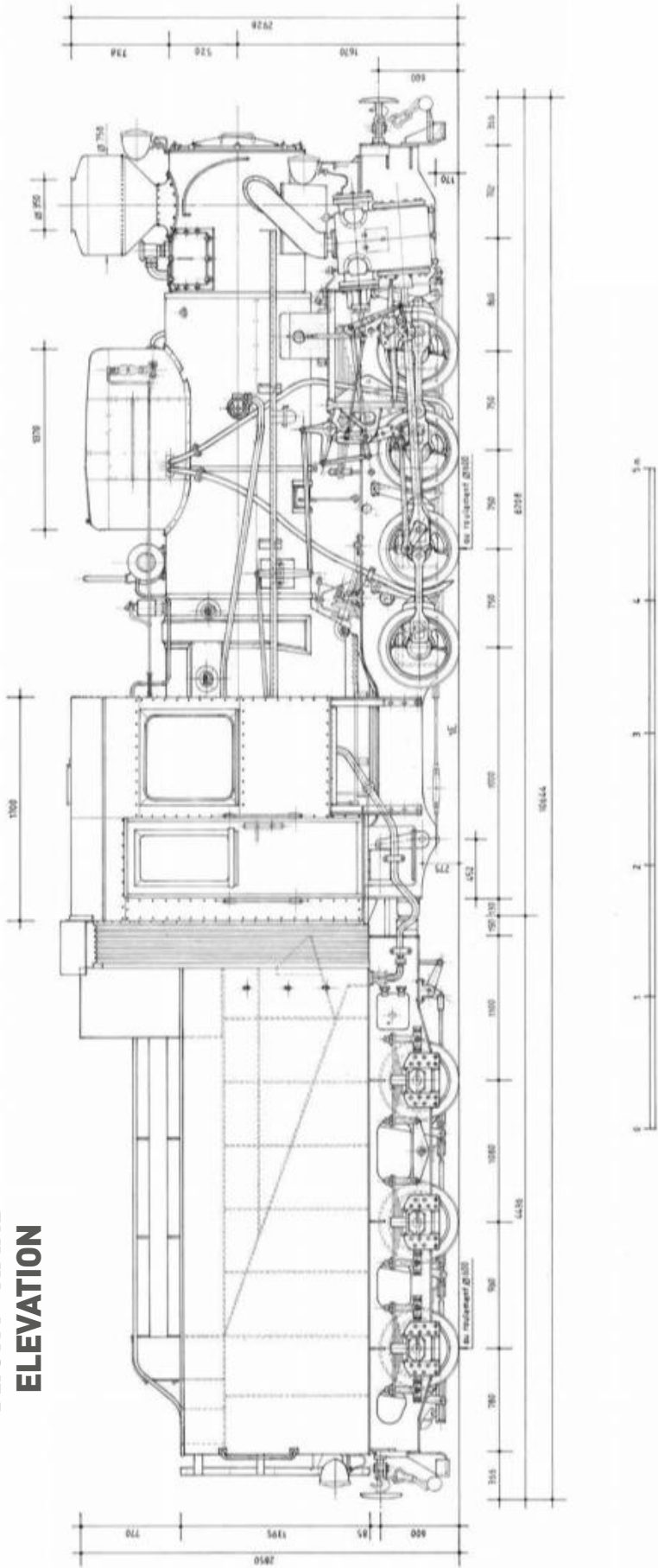
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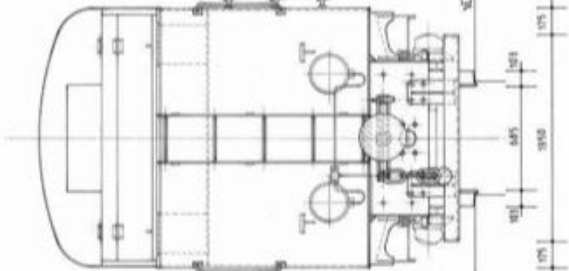
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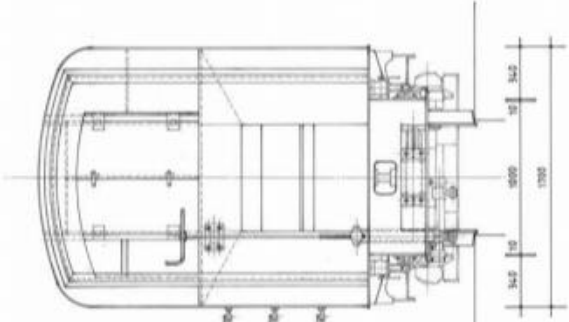
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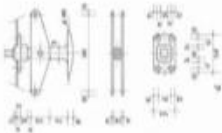
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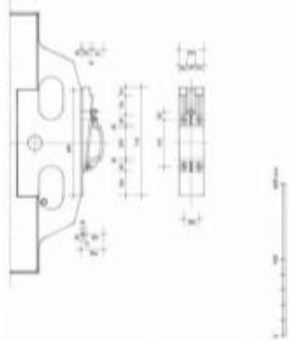
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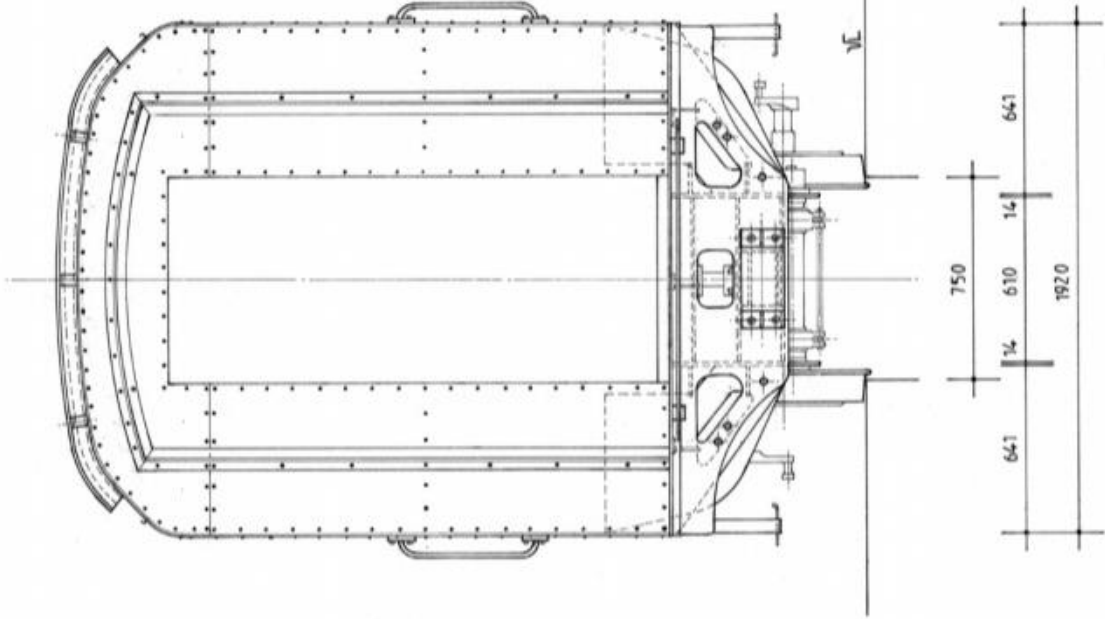
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