

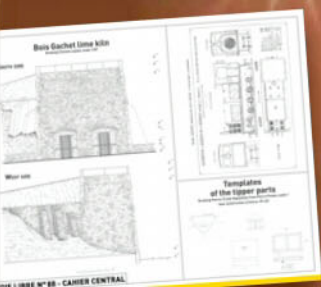
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VOIE LIBRE

INTERNATIONAL

CAMPAIGNING FOR A DIFFERENT

KIND OF RAILWAY MODELLING



*Folder of
drawings*

**REALITY AND
MODELLING**
**INTERNAL
COMBUSTION
HAULAGE ON THE
FRONT IN 1917**

DOSSIER
LIME GALORE!

ÎLE VAOUÛ THE FANTASY UNIVERSE

OF
THOMAS
SCHMID



Les P'tits Kits

Introduce a **NEW KIT**

After The sugar-beet train



The set comprises kits for assembling a closed van, a metal-sided open wagon and two wood-sided open wagons.

139,90 €

+ postage

Réf. : PTITKIT01

**ALSO AVAILABLE ASSEMBLED,
PAINTED AND LETTERED**

Réf. : PTITKIT01MP

179,90 €

+ postage



Here comes the 1915 Decauville set

NEW

The box comprises kits for assembling four wagons fitted to Decauville bogies:

- a pair of stanchion trucks with coupling bar,
- a low-sided open wagon,
- a Suippes-type wooden body fitted to a pair of stanchion trucks,
- and a tank with its hand-operated pump.

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+ postage

Réf. : PTITKIT02

**ALSO AVAILABLE ASSEMBLED,
PAINTED AND LETTERED**

179,90 €

+ postage

Réf. : PTITKIT02MP



Scale: H09/009 compatible
with off-the-shelf motive power

Made in Europe.

Available in April
from the LR Modélisme store
trains.lrpresse.com

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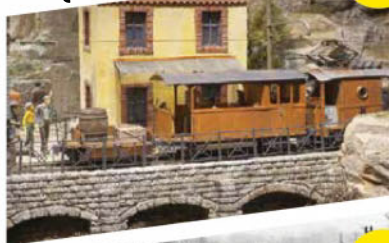
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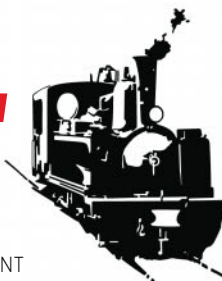
P.42



January, February, March 2017

VOIE

CAMPAGNING FOR A DIFFERENT



LIBRE

KIND OF RAILWAY MODELLING

Editorial #88

LET THE SPIRIT OF VOIE LIBRE FLOW!

We have decided to place this New Year issue under the sign of high spirits.

In addition to a feature explaining how to install a lime kiln on a layout, to a historical article about the advent of internal combustion haulage during WWI, and to articles about the shows that took place in late 2016, we have opted to be whimsical! Rochers de Naye, a whimsical rack-and-pinion line which runs up a mountain just for the enjoyment of hikers. The Leyrat

motor-trolley, a whimsical and weird propeller-driven machine. The whimsical and dream-like world of Île VaOù, the 0-16.5 layout shown on the cover. Not forgetting "Zwei Wochen", an equally whimsical and compact layout in 1/22.5 scale, dedicated to stone-cutting.

Such whimsical touches, combined with strong technical and historical knowledge, are what makes up the Spirit of Voie Libre! Happy modelling New Year to all!

François Fontana

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

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Folder of drawings

OPEN WAGON TK 301 TO 333 SERIES

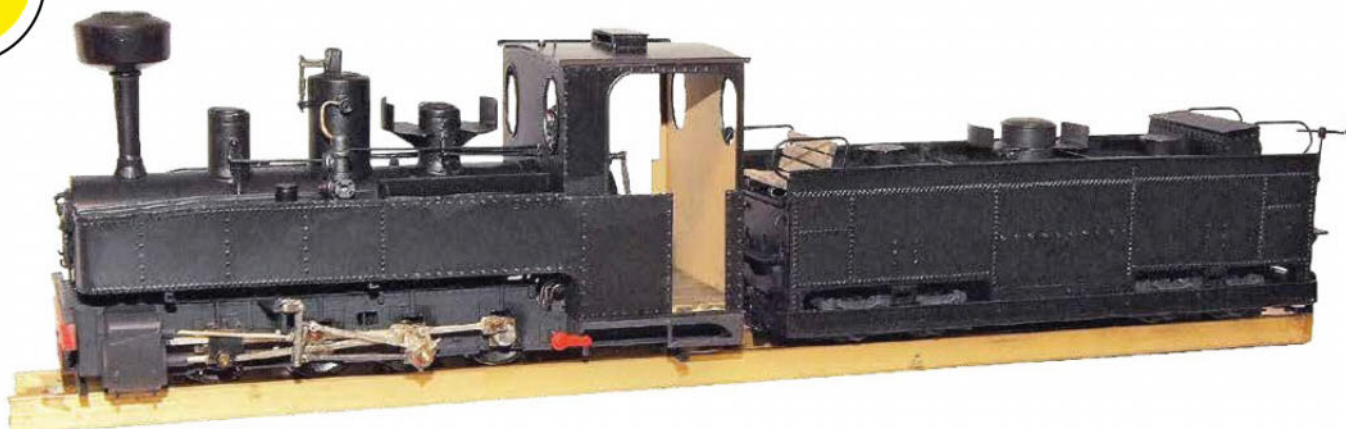
BOIS GACHET LIME KILN

OIL OR PETROL LEROUX LOCOMOTIVE

TEMPLATES OF THE TIPPER PARTS

0-12
0-14
0-16.5

LOCOS N STUFF : A BRIGADELOK 0-8-0 T



LOCOS N STUFF

<http://www.locosnstuff.co.uk>

12 Adelaide Road, Gillingham,

KENT ME7 4NJ (U.K.)

DFB 0-8-0 T: 250€

DFB TENDER: 45€

FELDBAHN WAGON: 35€



After having designed a "Joffre" type Kerr Stuart 0-6-0, the UK artisan Locos n Stuff has released a new model: a "Brigadelok" 0-8-0 T, better known in France under the acronym DFB.

More than 2,500 of these 60cm gauge locomotives were built for the German army during WWI, and a great many were put to work after the war on narrow gauge industrial railways. A good 100 DFB engines have survived throughout the world, of which some 20 in France on tourist railways. The kit comprises sheets of 0.3mm thick etched brass for the superstructure and of 0.4mm nickel silver for the chassis and motion. Some 50 cast bronze parts and a resin one for the firebox complete

the model. The motor supplied is a Mashima. This locomotive is compatible with gauges ranging from 12mm to 16.5mm, the latter requiring the chassis frames to be spaced a little wider – this isn't noticeable. Templates are provided to ease the assembly work, in particular for the motion cranks. The illustrated assembly instructions are supplied on a CD-ROM. Various builders' plates and prototypical "Feldbahn" couplers are available separately. Locos N Stuff also makes a DFB tender to go with this locomotive, as well as a German field railway bogie wagon, both with brass chassis, cast bronze parts and resin bodies.

Bernard Junk

0-16.5

HAPO : AN ELECTRIC LOCOMOTIVE

This is a model of an engine that ran on the railway used to maintain the Rhine banks. Built of brass with cast metal parts, it is sold painted and ready to run.

Based on the Hapo press file

HAPO / www.hapo-bahn.de / PRICE: 448€



H0-12

TILLIG : A HARZ 2-10-2



Number 99-247 in its Epoch III appearance has been chosen for this first reproduction. The prototype engines are real meter gauge monsters.

Following on from

the three 99-221 to 223 engines built by Schwartzkopf in 1931, of which only 99-222 remains in service today, the Deutsche Reichsbahn ordered 17 derived locomotives from Lokomotivbau Karl Marx, initially numbered 99-231 to 99-247, and re-numbered 99-7231 to 7247 in June 1970. The latter engines, 4.8 tons lighter than the original class, were built mainly for the Harz network. 12.5m long, 2.65m wide and 3.65m high, with an 8.5m wheelbase, 1m diameter driving wheels and 0.55m diameter pony truck wheels, these 700hp (515 Kw)

engines weighing in at 61 tons in working order (10 tons per driving axle) can achieve a top speed of 40kph. Tillig has produced a very fine model, highly detailed and accurate. Running is very smooth, with directional head and tail LED lighting and a realistic maximum speed. For the time being, only the analogue version is available, fitted with a Next 18 socket.

The chassis is articulated below the body to allow the engine to run through 310mm radius curves without unsightly modifications to the locomotive. It can even run through 515mm radius curves while retaining its piston-rod sleeves. The pony trucks are also fitted with close-coupling shanks! Super-detailing parts are supplied to fit the buffer beams with proper meter gauge buffers, as well as brake hoses.

Jacques Royan



TILLIG
REF. 2925
PRICE OBSERVED:
385.70€

H0-12

BRAWA : A HARZ COCO 199 872-3

In its series of large locomotives, Brawa has issued a new version of the standard gauge BoBo diesels fitted to six-wheeler meter gauge bogies. These engines were studied for the Selketalbahn and for goods services on the Harz system in the mid-1980s as a cheaper alternative to steam. Nicknamed "Harzkammel" (Harz camels), they consisted in re-using standard gauge V100 diesels made available by the electrification or closure of former East-German lines. Fitted with a 900 Kw/1225hp motor, a pair of six-wheeler bogies to spread the axle-load and keep it within the 10 ton per axle limit (with a flangeless axle in the middle for sharp radius curves), and a steam heating boiler, these recent engines from the 1976 to 78 period were modified from December 1988 onwards by the Stendal works. Ten sets of bogies were built. After having been sidelined somewhat in favour of a return to steam, they have nevertheless continued to be used on works or service trains, in

the event of breakdowns or for shunting, and for hauling ballast trains of standard gauge wagons on transporter trucks and more recently on transporter bogies. This explains why some have been fitted with standard gauge buffers, located slightly higher and which can be folded out of the way for direct coupling. With a maximum speed of 50 kp/h, ample power and a weight of 60 tons, they are still useful on the HSB system. Some have even been fitted with radio-operated remote control! The model we review here corresponds to the Epoch IV period when they were put into service on the meter gauge, and is available in DCC sound. Once thoroughly run in, the model performs beautifully, and the sound range is acceptable. The whistle is



as weird as on the prototypes... A few add-on parts have to be fitted, such as the brake hoses and the couplings. The latter can be either of the hook and loop type, or a meter gauge buffer. The small coupler for the transporter truck tow-bars is also supplied. Note finally that if you model in H0-9 and are fond of gigantic locos, a set of 9mm gauge axles is also supplied with the model.

Jacques Royan

BRAWA
REF. 41275
PRICE OBSERVED FOR
THE SOUND VERSION: 288.80€

H0-9

MINITRAINS : FRENCH ARMY SCHNEIDER MECHANICAL TRACTOR



The model displayed last year at the Nuremberg Fair is now with retailers. Plastic body and metal chassis, this engine has the same driving mechanism as earlier models from this manufacturer: a motor fitted with a flywheel in the cab, a worm gear and straight gears connecting all three axles. The connecting rods work the front jack-shaft. The body features many add-on parts, and there is working LED lighting at the front. I was particularly impressed by the reproduction of the bolts on the buffer

beams. Note that unlike the prototype, the cab angles are sharp-edged and there is no housing at the rear for the lamp. Three liveries are available. Two military versions: army grey overall or green body, black chassis and red buffer beams. The third version, red with a black chassis, will suit modellers wishing to imagine a post-war civilian career. According to the manufacturer, the price should be similar to that of earlier models.

François Fontana



MINITRAINS
PRICE: NOT DISCLOSED

H0-12

BEMO : MOB BDE4/4 RAILCAR 3005

The Montreux Oberland Bernois railway has named its electric motor units "railcars"! Built in 1944 by SIG/BBC for the first four units, and in 1946 for units 3005 and 3006, they weigh in at 36 tons empty, generate 630hp and can achieve a maximum speed of 75 kp/h. Seen for many years running that railway's fast services, often in EMUs, they were subsequently replaced by more modern and efficient stock, even though some were modified and repainted for the Panoramic-Express service in 1979, or converted into reversible units from 1974.

The model shown here is in MOB livery with the winged emblem, meaning the 1960/70s period. The body differs from the previous references released, as this second sub-series has an enlarged luggage compartment, and therefore one window less for the passenger area. These units were modified with single-arm pantographs. A few accessories have to be added to the front ends, such as the brake hoses and a few connecting cables.

Jacques Royan



BEMO
REF. 1381 305
PRICE: VERSION WITH ESU
DECODER 300€

H0-12**BEMO : FURKA OBERALP BOGIE CARRIAGE**

These FO carriages are true new releases. Built by SIG in 1914, these open-balconied carriages were used on the line in this version with new SIG bogies from the early 1960s to the mid-1980s, when most of them were scrapped. The body shells are very sharply

engraved and the carriages feature inside furnishings. The railings, brake hoses and electrical connections are separate add-on parts. Several versions are available, with a different body shell for the composite carriage.

Jacques Royan

BEMO

B 4223 CARRIAGE REF. 3246 213
AB 4124 CARRIAGE REF. 3246 214
PRICE OBSERVED: 76 €

B 4225 CARRIAGE REF. 3246 215
B 4228 CARRIAGE REF. 3246 218

N-6.5**AB-MODELL : PANORAMIC EXPRESS**

The German artisan AB-Modell manufactures a very fine range for fans of Swiss meter gauge in N scale. These models run on 6.5mm gauge track and are made of etched brass and nickel silver. The MOB railway operates the modern Ge4/4 8001 to 4 locomotives, built in 1995 to haul the Panoramic-Express. This is the class released by AB-Modell on a Kato driving chassis. In their blue and cream livery, they will look splendid heading a rake of panoramic carriages.

François Fontana, based on the press file

AB-MODELL

www.n-shmalspur.de

LOCOMOTIVE: REF. KT-021.1 MADE TO ORDER

PRICE: 499€

**H0-6.5****BUSCH : A DECAUVILLE TYPE 3 0-4-0 T**

This is a pleasing new release, of which a prototype was shown at Nuremberg last year: a Decauville type 3 0-4-0 T from

Busch for its Feldbahn range in 1/87 scale for 6.5mm gauge. The prototype was made available by the Frankfurter Feldbahn Museum. The model features simplified motion and runs very smoothly, albeit a tad noisily. The engine is available on its own, or in a set comprising an oval of track, a battery controller and a bogie wagon.

Jean-Louis Rochaix, Jacques Royan

BUSCH

LOCOMOTIVE ALONE:
REF. 12140
PRICE: 123€

**SCENERY****H0****BEMO : DRIVING CREWS**

Manufactured by Preiser, these items are available only from Bemo. This box of six drivers had been unavailable for some time. They will be suitable for most H0 scale cabs, their garments are fairly standard and most of the figures are painted blue.

Jacques Royan

BEMO / REF. 6504 000 / PRICE: 10€



What's New

Libre

QUAND LE P'TIT TRAIN PARCOURAIT L'ÎLE-DE-RÉ [WHEN THE LITTLE TRAIN USED TO RUN ON ÎLE-DE-RÉ]

André Arthur and Patrick Deludin have published an enlarged, updated and lavishly illustrated version of the historical and geographical study of the Ile de Ré lines of the Chemins de Fer économiques des Charentes system. This book, which serves as the catalogue for the exhibition organized at La Flotte-en-Ré until October 2017, tells the story of the insular lines based on a great many archival documents, as well as on contemporary study of the remains of the line. It features a map and drawings of the railway buildings and rolling stock.

François Fontana

LE MUSÉE DU PLATIN

www.museeduplatin.fr

Quand le p'tit train parcourait l'Île de Ré

André Arthur, Patrick Deludin

70 pages, softbound, format 21 x 29.7cm

Price: 18€ plus postage

MONT-BLANC EXPRESS BALADES AU FIL DES RAILS ENTRE MARTIGNY ET CHAMONIX [RAILWAY RAMBLES BETWEEN MARTIGNY AND CHAMONIX]

The author, Jérôme Vielle, invites us to discover on foot both the local railway heritage and the majesty of the valley and Alpine scenery, in five stages, following the railway line. This guide, hardly larger than a paperback, neatly printed and generously illustrated, describes all the aspects of the fauna and flora, while providing local and railway historical background. A fine hiking adventure and something

to look forward to in the summer months.

François Fontana

ROSSOLI

Le Mont-Blanc Express

Balades au fil des rails entre Martigny et Chamonix

Jérôme Vielle

160 pages

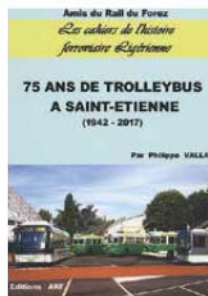
Format 20.5 x 13.5cm softbound

Price: 20€

75 ANS DE TROLLEYBUS

À SAINT-ÉTIENNE (75 YEARS OF TROLLEYBUSES IN SAINT-ÉTIENNE)

At the time when these vehicles, somewhat remote from the railway world, but in which tram fans remain interested... At



the time when trolleybuses have largely vanished from city centers, Philippe Valla reminds us that in Saint-Étienne they played a major part in urban transport. With no less than 7 lines in their heyday, they are now down to just one. But as was the case for its tramway, Saint-Étienne, together with three other French cities, remains attached to its public transport systems.

The book retraces 75 years of the life of the network, describes the buses and tells the story of the dismantling of most lines. It also describes preservation efforts and the life of preserved vehicles.

François Fontana

AMIS DU RAIL DU FOREZ

<http://arforez.free.fr>

75 ans de trolleybus à Saint-Étienne

Philippe Valla

Price: 9€

GATHERING

MODEL TRAIN LUXEMBOURG

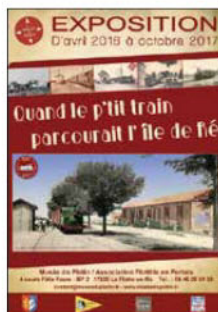
4 AND 5 MARCH

We will attend the first exhibition organized on 4 and 5 March by ModellBunnFrënn Jonglënster at Junglinster in Luxembourg. Check out the programme on www.mbfj.lu.



EXHIBITION TILL OCTOBER 2017

This exhibition *Quand le p'tit train parcourait l'Île-de-Ré* [When the little train used to run on Ile-de-Ré] is held at the Musée du Platin at La Flotte-en-Ré. Until October 2017, railway history fans can learn all about the Ile de Ré lines of the Economiques des Charentes system. www.museeduplatin.fr



Walferdange

NARROW GAUGE—LAND!

Walferdange, in the Grand-Duchy of Luxembourg, brings together railway modellers every autumn. And narrow gauge steals the show!

Text: François Fontana
Photos: Thomas Schmid

0m



The railcar and its trailer are in charge of the fast service! Note that sharp curves and steep gradients don't get in the way!

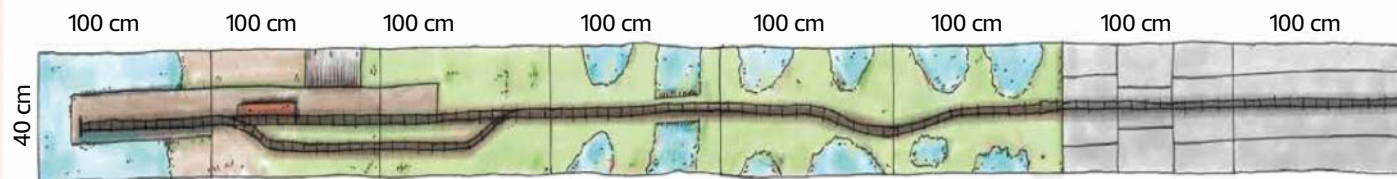
The exhibition hall isn't very big; some 15 layouts are on display, but all of them are of a high standard. The public is keen, faithful and the European scope of this gathering is undeniable.

Walferdange has achieved the reputation of a must-see show for all narrow gauge fans. This year, we chose to review two of the 8 layouts displayed: *Inselbahn*

Bieberoog in 0m by Alexander Lösch and Chat Moss in 0-9 by Philipp Gerber.

INSELBAHN BIEBEROOG

Don't seek out this 8km long meter gauge line serving a North Friesian island! Maps will be of no help to you, as this is a fictitious location. But its creator, Alexander Lösch, has done such a good modelling job that the scene is highly believable. ■■■



Pierre-Frank Ségurineau

0m



The train calls at Norddorf-Brücke station, the figures are from the Preiser range and repainted.

A sail-propelled trolley is waiting for a tailwind to take the ganger team down the line.



■ ■ ■ The layout consists of eight modules, each measuring 100 x 40cm; six are decorated and two accommodate the fiddleyards. The benchwork and roadbeds are made out of plywood, the scenery out of Styrofoam. The track is home-made using code 100 rail on a mixture of copper-clad epoxy and wood sleepers. The buildings and wharves are built out of wood strips, the sand is from beaches on the Baltic, while the plants are made out of traditional flock materials. Making trees wasn't the most time-consuming job for Alexander: "This is one of the advantages of modelling such a windswept region" he admits! The water is reproduced with a sheet of textured acrylate used for shower screens,

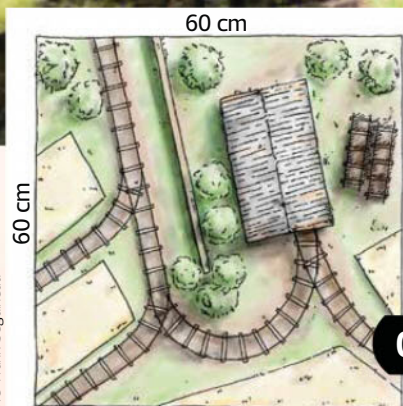
coated in glossy coloured varnish. The stock is mainly from modified commercial items in 0-16.5 from the Fleischmann Magic Train and Henke ranges, adapted to 22mm gauge.

TORFBAHN CHAT MOSS

This layout is tiny and square-shaped (60 x 60cm), even cubical should I say, as it is almost as high as it is wide! It represents a peat-bog located in England. Philipp Gerber has carefully modelled two scenes, visually separated by a scenic divider. On one side, the technical facilities: scrap heap, track storage and processing building. On the other side, a peat-bog with its peat lumps drying out in the gentle spring

sunshine. The layout doesn't have a fiddleyard, but offers some fine skip shunting sequences between the peat-bog and the processing building.

Almost everything is scratchbuilt, the motive power and rolling stock are from the Hapo and KB-Scale artisan ranges and from 3D prints available from the Shapeways stores.



Pierre-Frank Seguinéau

0-9

The technical side with its scrap-heap, the rolling stock and the large building!



An almost perfect cube for a peat-bog operation.



On the other side, the sidings fan out across the peat-bog. Note how the scenery blends in smoothly with the photographic backscene.



The rolling stock is carefully weathered.

RailExpo 2016



H0-12 STEALS THE SHOW!

This year, cinq artisans attended the RailExpo show in Chartres to display their new releases. The 2017 programme is quite mouth-watering, especially if your scale is H0-12.

Text and illustrations: Aurélien Prévot



H0-12

Aubertrain

H0-12

Ferro-Train



IIM

APOCOPA (<APOCOPA.FR>)

The X 232 railcar from the Yunnan railway in Indo-China, with a Perspex body, is now available. This limited and numbered edition is sold ready-to-run for 790 € + postage.

0-22.5

AUBERTRAIN

The Sud France 4-6-0 T is announced for June 2017. The Sud France wagons, already available in the H0 range, are being developed for 0-22.5.

H0-12

AUBERTRAIN

The Corpet-Louvet 2-6-0 T is available: in brass kit form (ref. 610-05, 390 €) or

assembled and painted (ref. 620-10, 780 € + postage). Digital version: ref. 620-11, 880 € + postage. The Sud France carriages: second, first/second composite and second/van composite are being released in H0-12.

BÂTIMENTS ET CONSTRUCTIONS FERROVIAIRES (<BCF-MODELES.FR>)

Two new CdN wagons: closed van (ref. BCF M108, 42 € + postage), and open (ref. BCF M106, 34 € + postage).

CBR network: composite first/saloon carriage with central balcony (ref. BCF M05), first/van composite (ref. BCF M06 52 € + postage).

Jura network: first/second composite carriage (ref. BCF M04).

Chemins de fer du Morbihan: ANF four-wheeler carriage (new chassis, full brake rigging and detailed buffer beams with safety chains end braking system), second class (ref. BCF M07), first/second composite (ref. BCF M08 49 € + port). Reference BCF M07 CDN (5 euros + postage) is a kit for converting the Morbihan carriage into a CdN railcar trailer.

FERRO-TRAIN (DISTRIBUTED BY SAI)

An Austrian railways snow-plough (ref. 815-451, 220 €). Also available in H0-9.

Ilm

Apocopa



(B)



(A)



H0-12

Trains d'Antan



(D)

(C)



TRAINS D'ANTAN (<MODELE-REDUIT-TRAIN.COM>)

The CFD Vivarais diesel locomotives X (photo A) and Y (photo B), nickel silver and resin kits, are available: 290 € + postage. The Chemins de fer des Côtes-du-Nord and Tramways de l'Ain De Dion KG railcar, brass body on resin chassis (ref. 418, 220 € + postage) is announced for January 2017. The brass kit of the Réseau Breton Mallet,

with both driving chassis powered, will be selling for 590 € + postage.

POC network (photo C): C4f carriages (ref. 250, 54 € + postage).

Economiques des Charentes, Île de Ré network (photo D): five-window carriage (also found on the Tramways de l'Ain) second classe carriage and composite first/second (ref. 251, 54 € + postage).

H0-9

BÂTIMENTS ET CONSTRUCTIONS FERROVIAIRES

Gilles Fressonnet has announced nickel silver and resin carriages, four-wheeler and bogie, closed or of the toast-rack type, from the Calvados network. Ca. 50 € + postage. A Péchot flat wagon, a nickel silver and resin kit, is foreseen for late 2017.



The BCF Baume & Marpent open wagon.
Overall dimensions: 76 x 29.5mm.

THE BAUME & MARPENT OPEN WAGON BY BCF

The BCF firm (Bâtiments et Constructions Ferroviaires) produces, in H0-12, nickel silver and resin composite kits. This article describes the assembly of a pleasing *Côtes-du-Nord* open wagon.

H0-12

Text and illustrations: François Fontana

MODÈLE EN BREF

Scale: H0 1/87

Gauge: 12mm

Nickel silver and resin kit

**Point-tipped axles in machined
brass bearings**

Model: Baume & Marpent open
wagon

Network: *Côtes-du-Nord*.

Price: 34 €

BCF: 2 route des Vallières, 78125
Raizeux, France <www.bcf-modeles.
fr>

The kit comprises a handful of plastic pouches containing the resin parts (still on their sprue), two 0.3mm thick etched nickel silver sheets, a set of transfers and the 5-page instruction sheet.

ASSEMBLY

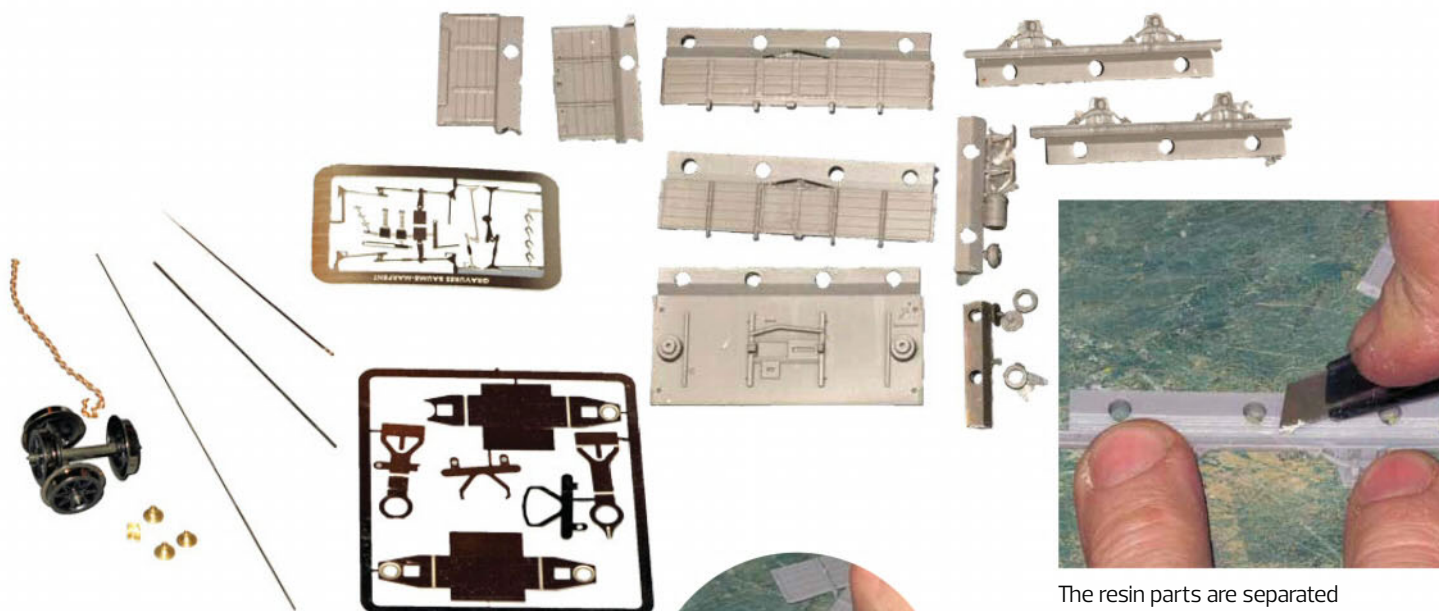
The resin parts must be thoroughly washed with tepid water and soap. They must then be separated from the sprue with a scalpel blade, and any remaining flash trimmed off with either the scalpel blade or a file. The parts are assembled with instant adhesive, the semi-spherical poka-yokes ensure accurate assembly. I had to touch up the

hollow semi-spheres, by hand, using a 0.8mm diameter drill bit.

The brake rigging, complete below the chassis, is made out of etched nickel silver. Soldering the parts is a delicate job and requires some care.

The instructions suggest fitting safety chains... this is a great modelling moment: I strongly recommend using a binocular magnifier! But it can be done with the right tools and plenty of patience!

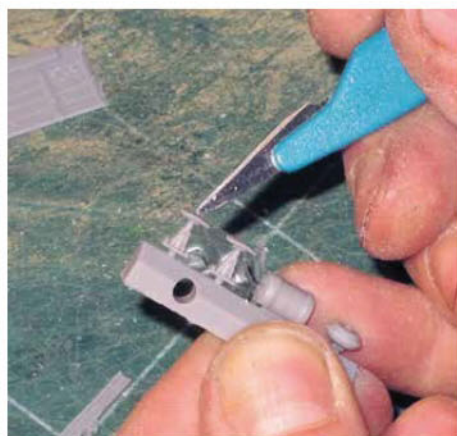
The transfers are very fine, and their flexible backing is easy to position properly. You will need to trim back the markings for the bulwarks as close as possible to the lettering.



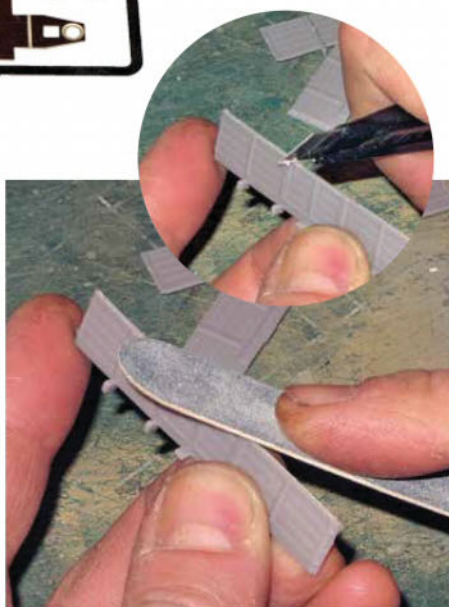
The parts on opening the pouches.



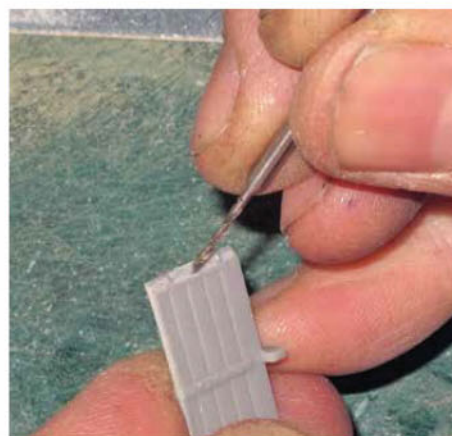
The resin parts are separated from the sprues.



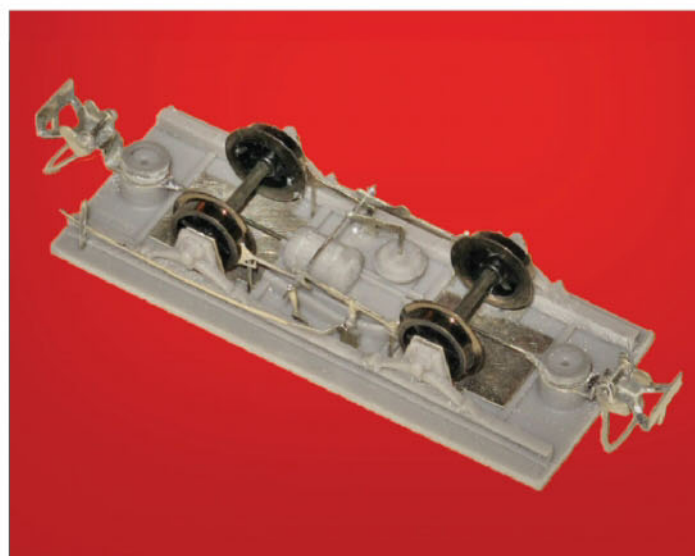
The fine parts are surrounded by a web of resin which can be removed simply by pressing it off with a scalpel blade.



The top of the parts is finished off with a cardboard file or the blunt side of a scalpel blade.



I touched up the poka-yokes with a 0.8mm diameter drill bit.



The assembled chassis.

SOLDERING THE COUPLINGS

To solder the pivot of the mobile loop without the risk of soldering the two parts together, insert a sheet of thin paper between them. The solder won't run, and both parts remain mobile.



The paper prevents the solder from running between the two parts along the shaft.

Île VaOù

We are here in a world of dreams, of fantasy, yet a world that does look real. Such is the art of Thomas Schmid: to immerse us in his own universe while leading us to believe that we are observing reality.

THE MODELLER

Text: François Fontana
Photos: François Fougier,
François Fontana, Thomas Schmid



Thomas

We are now familiar with Thomas Schmid, to the extent that we look forward to a new creation of his almost every year – rather as if he was some famous film director! And every time, Thomas carries us away into his very own world, half-way between dreams and reality. He shows us round highly personal creations, which refer to real secondary railways, of the heritage or industrial varieties, combined with references of a more artistic nature, in the fields of literature, painting or photography. Professionally, Thomas is an architect, so his work consists in turning intellectual designs into something real, while taking account of significant technical constraints. When it comes to modelling, he can forget about those constraints; he can blend universes, scales, forget about gravity and the resistance of materials. He can place a mountain upon a tiled

(Continued on page 19)

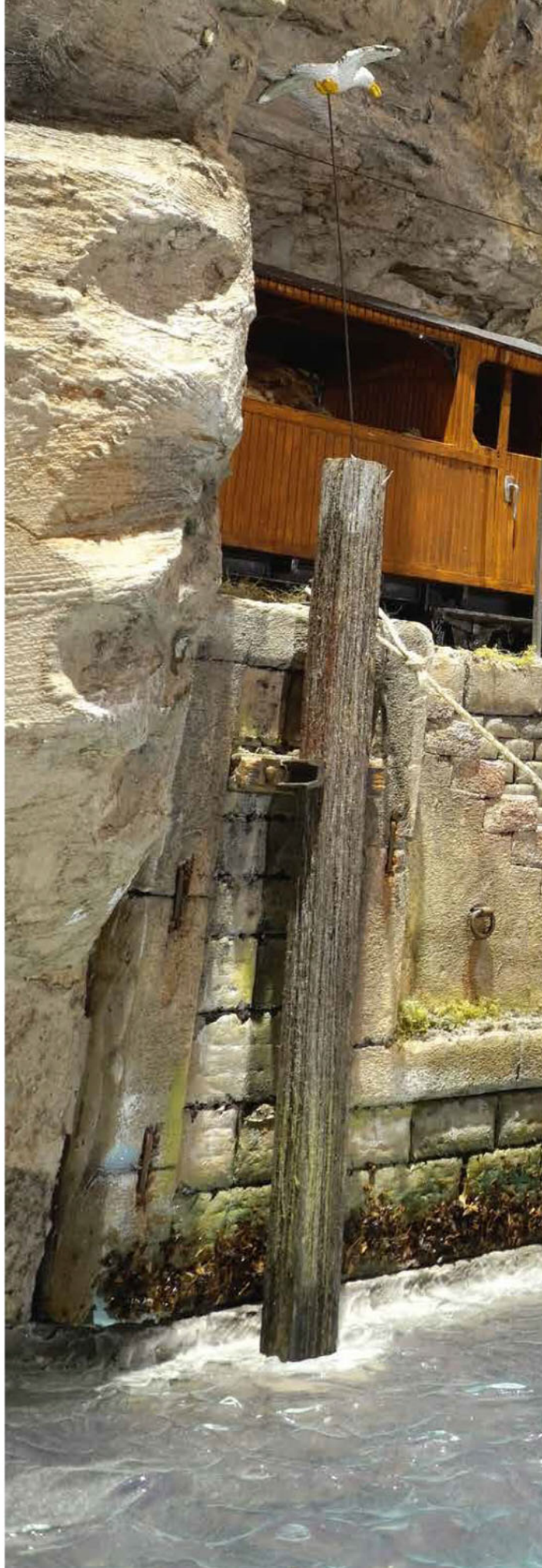
The layout at a glance

Scale: 1/43.5

Gauge: 16.5mm

Dimensions: 100 x 100 x 200cm

Control: digital





The ship has just moored alongside the wharf, and the rack train is going to take us from Île VaOù-Harbour to Île VaOù-Highlands.

Île VaOù, how is it made?



The plywood infrastructure.



The sculpted Styrofoam rocks and the bridges are now in place.



The overhead wires have been hung, they are protected by small flags folded in two; have you guessed Thomas' nationality?

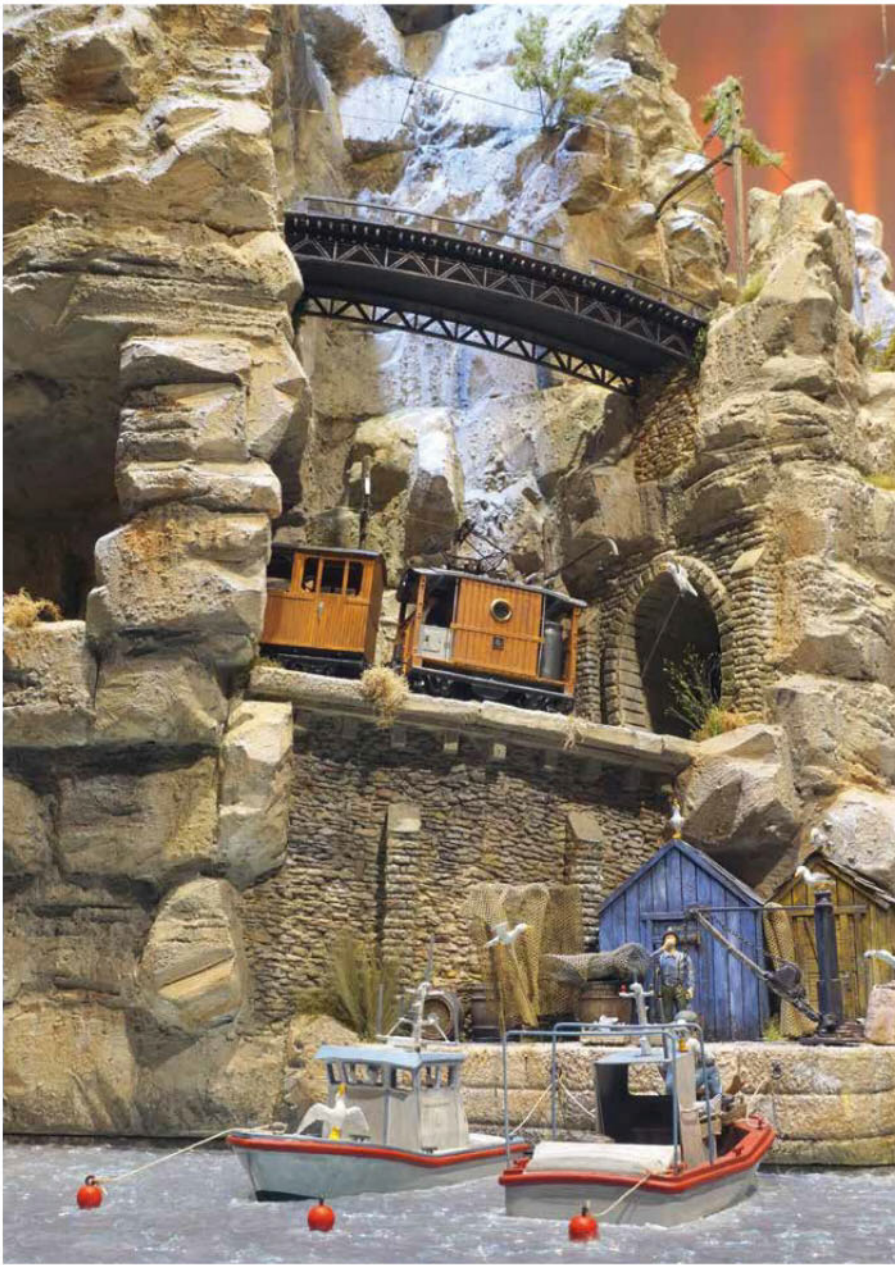
Thomas Schmid explains:

"The layout benchwork is a large 10mm thick plywood cross to which the trackbed – also 10mm ply – is fixed. This structure is then coated with blocks of Styrofoam. I then proceed to sculpt the foam with whatever tools happen to be handy, before applying a coat of surface filler. This relief is then painted and coloured with acrylic shades. The retaining walls and the tunnel portals are created in the same way. The track is from the Peco 0e range, fitted with the H0 scale Fleischmann rack rail. There are no turnouts! Keep it simple...

I make cardboard mockups to check the volumes of the buildings, before assembling the final buildings out of laser-cut wood."



Walls and rocks have been given their colours, corrugated cardboard mockups are used to check how the buildings will fit.



(Continued from page 16)

roof, fit an industrial workshop into the space normally assigned to a kitchen in a flat. And what impresses us most isn't so much that he does it, but that he manages to convince us that this is the real thing. When observing one of Thomas' layouts, one becomes absorbed, immersed in a unique universe and one forgets about checking out what is real.

So, enjoy your trip around Île VaOù. Leave your beliefs behind on the wharf, hop on-board this strange vessel, higher than it is long or wide, and set foot on these amazing shores. ■

The train makes its way to the summit of the island by a spiral track which runs through many awkward stretches.

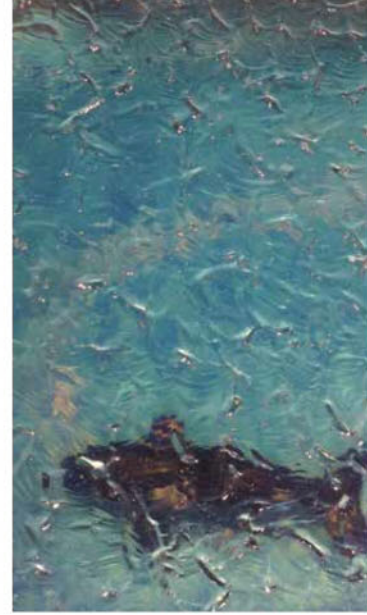
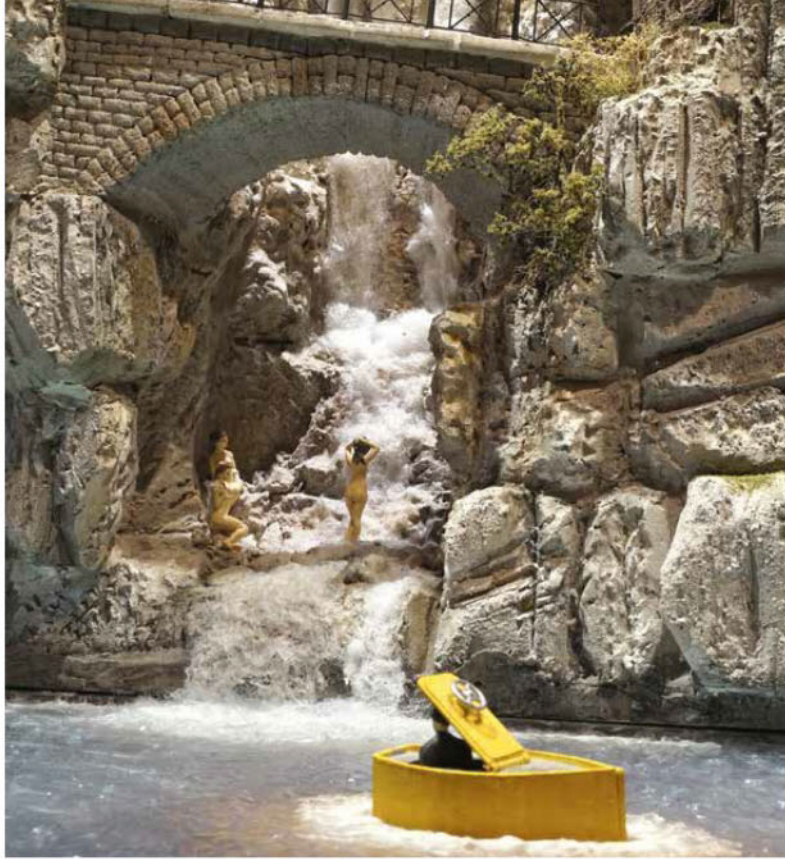


At the summit is the small station.

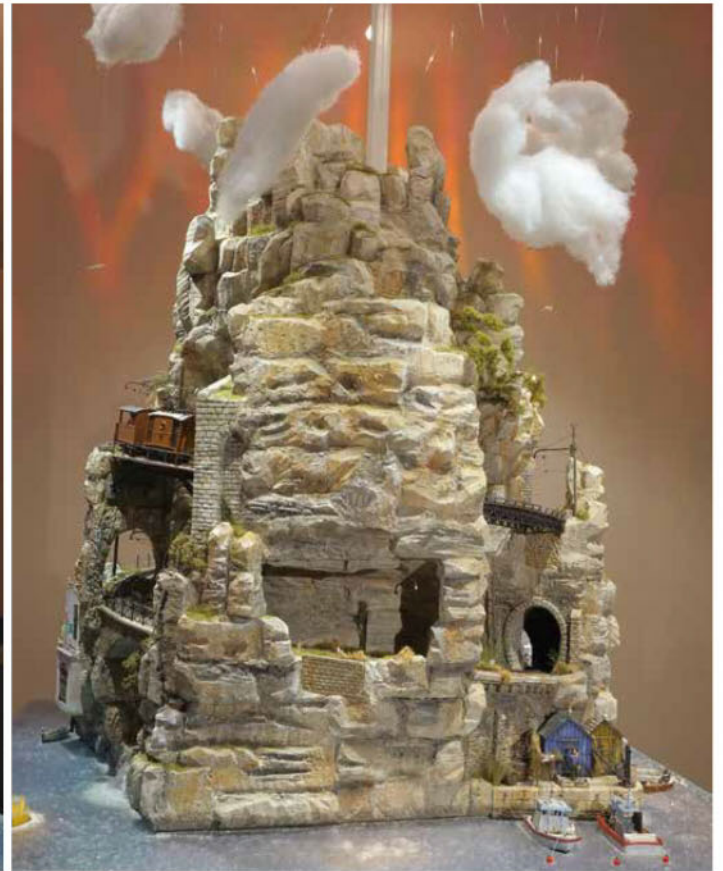


The heart of the mountain is mined! But no one knows what type of ore this very narrow gauge (9mm) railway actually carries!

Each side of the layout is different.



The small animations provide the layout with a blend of realistic and whimsical flavours, such as the submarine conning tower which emerges from the water and opens up, letting the captain pop out!



The layout is designed as a piece of architecture, like a Tower of Babel. Its square base gradually becomes a circle, then a point that vanishes towards the surrounding clouds. As if magically, it's also this point which carries

the lighting system which bathes this wonderful world in a sunny summer atmosphere. To achieve this effect, Thomas uses dichroic lamps that produce directive light and generate shadows.



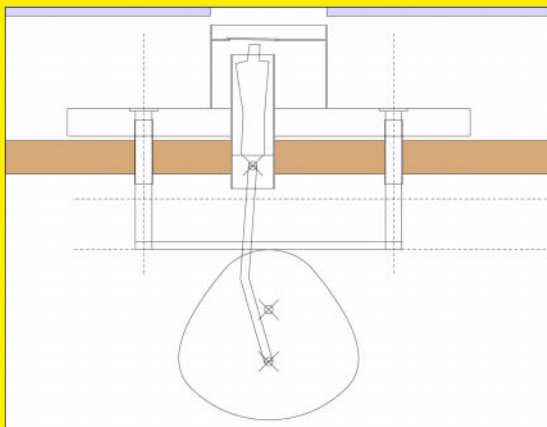
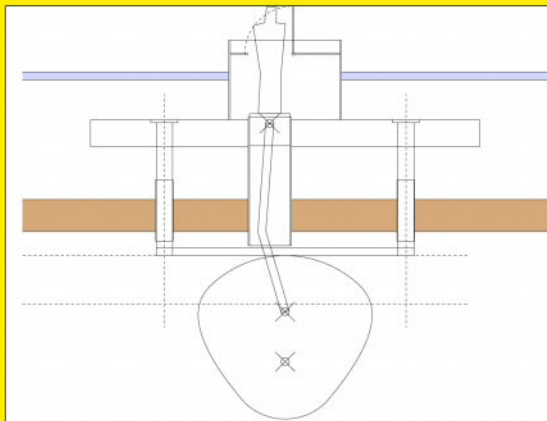
The surface of the sea consists of a transparent polycarbonate sheet, coated with acrylic medium to simulate the waves.

Animations

Thomas Schmid explains:

"The layout is packed with animations, all of them are designed around 3V motors fitted with gearing. I use connecting rods, off-set arms,

and sets of cams... My aim is to make the surroundings of the layout as life-like as possible, viewers must believe in the existence of the vessels, the rolling movement contributes to this effect."



Schematic diagram of the up-and-down movement of the submarine conning tower and of the captain. (See picture above)



The hidden side of the submarine. The cam controls the up-and-down movement of the submarine, while the off-set rod works the opening of the conning tower hatch and the appearance of the captain. Surrounding this system is the chain which drives the fish.



The hidden side of the moored vessel: the crank fitted to the gearing output shaft operates the rod which makes the vessel roll.

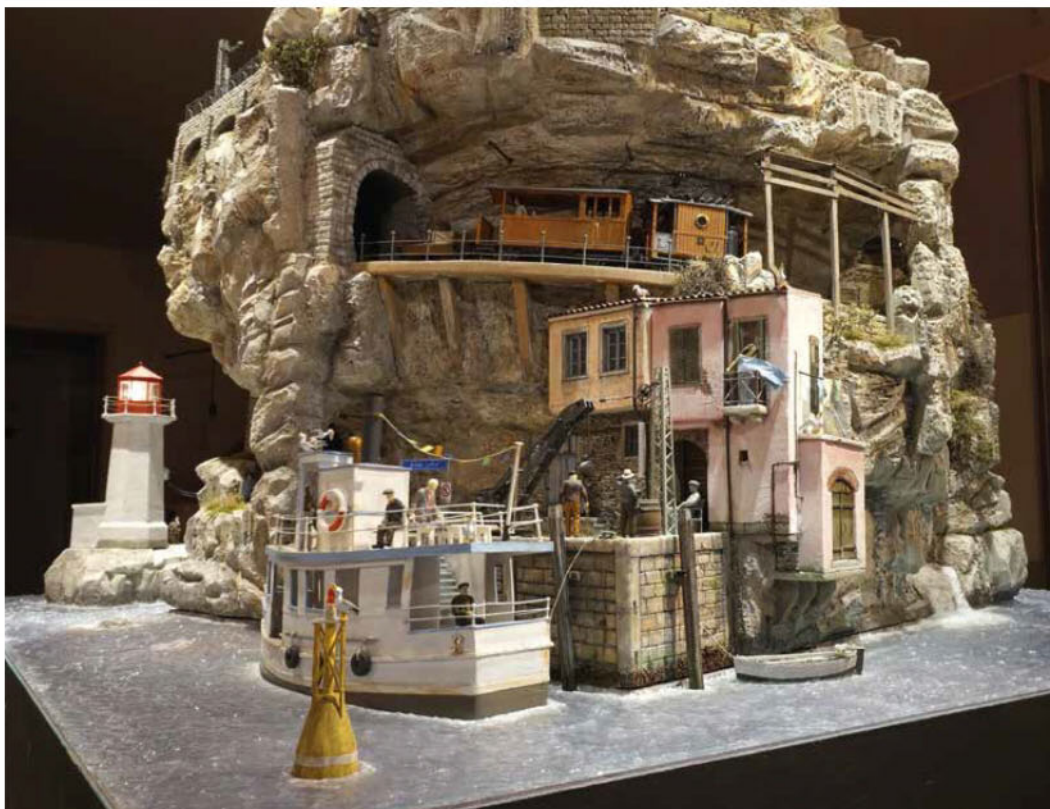


The vessel is mounted along its longitudinal axis, which is articulated. The rod that generates the movement is visible in the middle of the axis; it's the piano wire tip.

0-16.5 Layout



Both the fishermen and the birds seems quite indifferent to the movements of the vessels.



At the tip of the island, a lighthouse warns sailors about a reef!





Our visit has come to an end, it's time to get back on board.

First World War

THE ARTILLERY LOCOTRACTORS

Text: Éric Fresné

On a battlefield, steam locomotives have a major drawback: they produce plumes of smoke that make perfect targets for enemy artillery. Time for locotracors to step in.

Getting steam engines up and running is also a lengthy and tedious task. In the case of 60cm gauge track, the French Artillery sought to alleviate such problems by using other types of motive power.

THE LEROUX TRACTOR

The Artillery even worried about this matter before the war, as it signed a contract on 3 February 1914 with the Leroux company in Valenciennes. Its purpose was the supply of a petrol-driven 8-wheeler engine, able to haul a 48 ton train on a 28 mm/m gradient. A four-cylinder 120hp motor drove the four axles via a jackshaft and side-rods. A winch was also foreseen. It was designed to enable a train consisting of the engine and of three Péchot flat wagons to move up a 100 mm/m gradient. It would seem that the prototype was delivered and tested in Toul.

But the outbreak of the war and the occupation of Valenciennes by German troops nipped the Leroux project in the bud. The concept was resurrected ...



A Schneider mechanical transmission locotractor seen in a depot, behind the front line.

The Army locotracors



Fonds Valois / Collection BDIC

In March 1917, this Schneider unit, hauling a ballast train, has already suffered some war damage, as shown by the impacts on the side panels of the bonnet.

One of the Mac Ewann-Pratt locotracors having survived the conflict. With its winch removed, it is seen here at the Pithiviers sugar mill where it is shunting the sugar beet trains.



This brand new locotractor was extensively photographed by Georges Mangin. It carries N° 30. Note the large housing for a lamp, and the horn.

N° 30 again, but seen side-on. It therefore belongs to the first series built in 1916.



J.-L. Rochaix



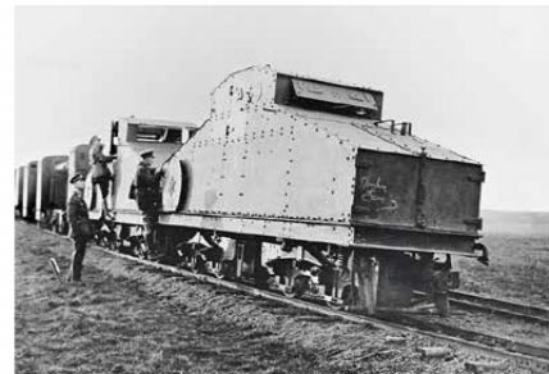
G. Mangin / coll. D. Oberlin



Fonds Valois/Collection BDIC



G. Mangin/coll. D. Oberlin



Fonds Valois/Collection BDIC

Some photographs show commandeered civilian locotracors. This one is of German origin and is seen hauling a train of drinking water in the Toul.

Two Crochat units being inspected by British officers at Maubeuge on 11 November 1918.

■ a few months later in the U.K. Mac Ewann-Pratt built for the French artillery a small series of six-wheeler locotracors whose features were very similar to those of the Leroux machine.

THE SCHNEIDER TRACTOR

Since 1911, Schneider & Cie had been manufacturing industrial locotracors. In 1916, the Army naturally turned to the Le Creusot company to obtain a 60cm gauge machine, simple to use. Schneider designed the LG type as well as the slightly more powerful LG3. These engines also called upon a mechanical transmission via side-rods and a jack-shaft. The entire driving mechanism was carried on a cast pig-iron chassis-cradle. These tractors were able to haul a 200 ton train at 5kph on the level. Schneider supplied 120 units in all, of all types, in 1916 and 1917. These engines were very popular thanks to their sturdiness and ease of use. They enjoyed a fairly lengthy second career on the military railways of Morocco.

THE CROCHAT LOCOMOTIVE

Towards the end of the war, the Artillery felt the need for even more powerful locomotives. It applied to the Crochat company, which offered electric transmission locotracors powered by a petrol-driven generator. In partnership with the Saint-Chamond forges and steelworks, Crochat produced 200 units in 1918. More than simple locotracors, these were true BoBo locomotives ■



Assembled at Saint-Chamond, the Crochat locomotives feature electric transmission.



Fonds Valois/Collection BDIC

ON THE FRONT

A Crochat locomotive near the front.

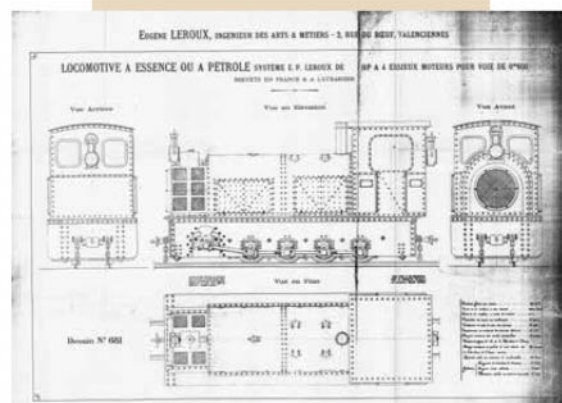
A Campagne locotractor seen at La Maltournée depot.



G. Mangin/coll. D. Oberlin

THE FEBRUARY 1914 DRAWING !

Even though it isn't certain whether the Leroux project was actually implemented, it does at least exist on paper. Georges Mangin even managed to obtain a copy of the engine's drawings. Thanks to Didier Oberlin, his grandson, we are able to provide you with this drawing in our central folder.



CAMPAGNE UNITS FOR THE REAR

The Campagne company also supplied the Artillery with an indeterminate number of small locotracors. With their benches that could seat two or four persons depending on the type, they could be qualified as motor-trolleys.

It would seem they were used only in storage depots behind the front line. Their lightweight coupling gear would have prevented them from hauling the heavy Péchot or Decauville wagons.



Fonds Valois / Collection BDIC

Wesserling, 8 August 1916, a petrol-driven motor-trolley on 60cm gauge track, used by the Engineer Corps.

--- featuring two bogies and a long steeple-cab type body. The generator was located inside this body, while the traction motors were fitted to the bogies. This type of engine could haul an 85 ton train on the level. Reliable and sturdy, the Crochat locomotives enjoyed a fine post-war career. In 1940, they were still in service on the Maginot line.

AND WHAT ELSE ?

Aside from commandeered civilian units and some battlefield loot, the Artillery did not rely only on its French locotracors. During 1918, is placed a huge order, for 600 units, with Baldwin in the United States. These engines were strictly identical to the 50hp type then in service with the Pershing expeditionary corps.

It would seem that the end of the war and their late delivery prevented them from being put into service. Most of them were sold on to the civilian sector.



Fonds Valois / Collection BDIC

A Crochat locomotive seen crossing the lifting bridge over the Marne canal at Mareuil-sur-Ay, on 25 July 1918.

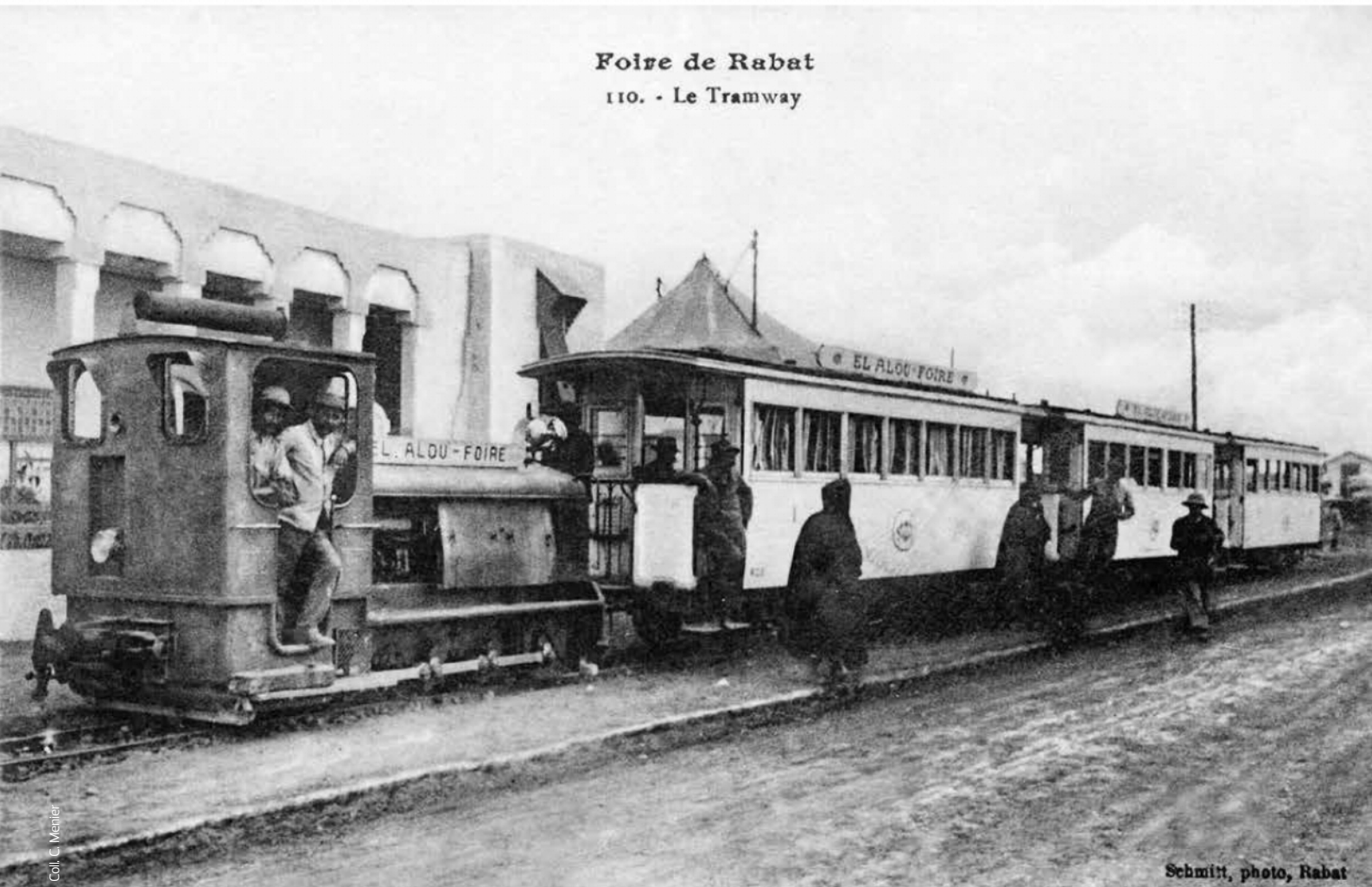


Two wrecked Crochat locomotives on the Maginot Line.

MOROCCO

Undoubtedly more rustic than the Crochat engines, the Schneider units enjoyed a second career in the sands of Morocco. This one is hauling a tramway train during the commercial fair of Rabat.

Foire de Rabat
110. - Le Tramway



Schmitt, photo, Rabat

A LEYAT PROPELLER-DRIVEN MOTOR-TROLLEY IN SM 32

(2nd PART)

Continued!

Your were looking forward to it, here is the second instalment in this construction project that started in our previous issue. Today, this weird wingless bird is beginning to take shape...

Text and illustrations: **Raymond Duton**



The Leyat motor-trolley seen from a different angle. The « beast » is as strange as ever!



1 The Cambrian Models wheels. Only the smaller ones will be used.

In the first part of this article, I explained how to build the chassis and... the body (I almost wrote « the fuselage ») of this model. Sooner or later, this machine must run on rails, so we must now procure wheels, build bogies, as well as a few other elements which you can discover below.

The railway wheels

On the model, these wheels should have a diameter of 11.3mm (215mm diameter wheels on the prototype), but no such wheels are commercially available. Two solutions: you can make them on a lathe, or opt for slightly smaller wheels, which is what I did by choosing wheels from the Cambrian Models range (ref. NW7 Loco Wheels). Four sets are needed: each set comprises four 19mm wheels and two 13mm wheels, only the latter will be used. Their diameter is only 1.7mm overscale, which is acceptable. For a model powered via the track, you will either have to fit the wheels with

a machined tyre and rim insulation, or find Rivarossi Western 4-4-0 type wheels in O scale, which isn't necessarily easy. The bogie wheels of this locomotive are 12.7mm in diameter and there are four. The tender wheels are 14mm, and there are 8, so you'll have enough. As far as I know, this is the only model with suitable wheels. Otherwise, opt for Slater's wheels (ref. 1612HUD 1'0" 4 Hole Disc Wagon Wheel), but their diameter is 16 mm, meaning 4.7mm more than the proper scale dimension. I advise you against using H0 scale wheels, as the width of the tyre is far too small: you're sure to derail on the very first turnout! But let's return to our Cambrian Models wheels. For the discs, I started from a master model made out of 2mm thick plastic sheet, which I duplicated by

**HALF-AEROPLANE
HALF-LOCOMOTIVE**



DISMANTLING

Road wheels and motorcycle engine

To move when on the road, the Hélica used 650mm motorcycle wheels, meaning a scale 34mm. Many motorcycles are available in 1/18 scale, but their wheel diameter is 36mm. Here again, this remains acceptable.

To obtain the wheels and their rubber tyres, I had to dismantle two 1963 Harley-Davidson "EL Knucklehead" bikes, models from the Maisto range in 1/18 scale. The spokes are concealed by discs cut out of 0.25mm thick plastic sheet, with the access hole to the inflating valve located on the inside. The hubs are re-drilled to a diameter of 2.5mm. As was the case for the railway wheels, lengths ...

4 The wheels and their discs at various stages of work.



2 The railway wheels once modified and the motorcycle wheels fitted with their discs. Note that the access hole to the inflating valve is on the inside.

making resin castings. During the first tests, I experienced derailments on rail joints, because the profile of the wheel flange had a sharp angle. To solve the problem, I thickened each wheel by gluing a 0.76mm thick plastic sheet plate on the back. I also smoothed the profile of the flange by turning the wheel on a mini-drill: this is a very easy job using a fine file or a cardboard file.

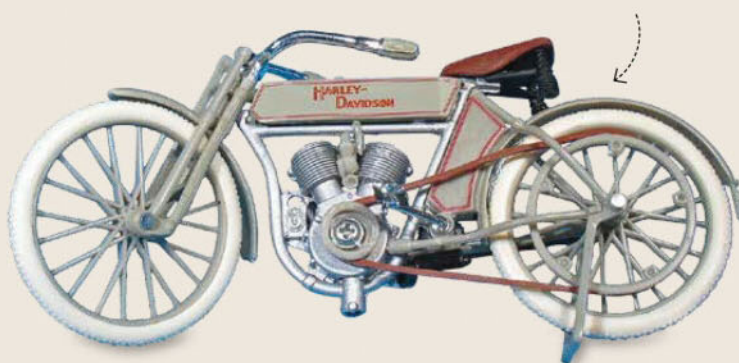
On each wheel, the center is re-drilled to a diameter of 2.5mm, fitted with a length of brass tube measuring 2.5 x 0.45mm (L'Octant, ref. P 1247), whose length is equal to the overall thickness of the wheel.

3 1963 « EL Knucklehead » Harley-Davidson bike. You will need two of these for the wheels and tyres.



Motive power

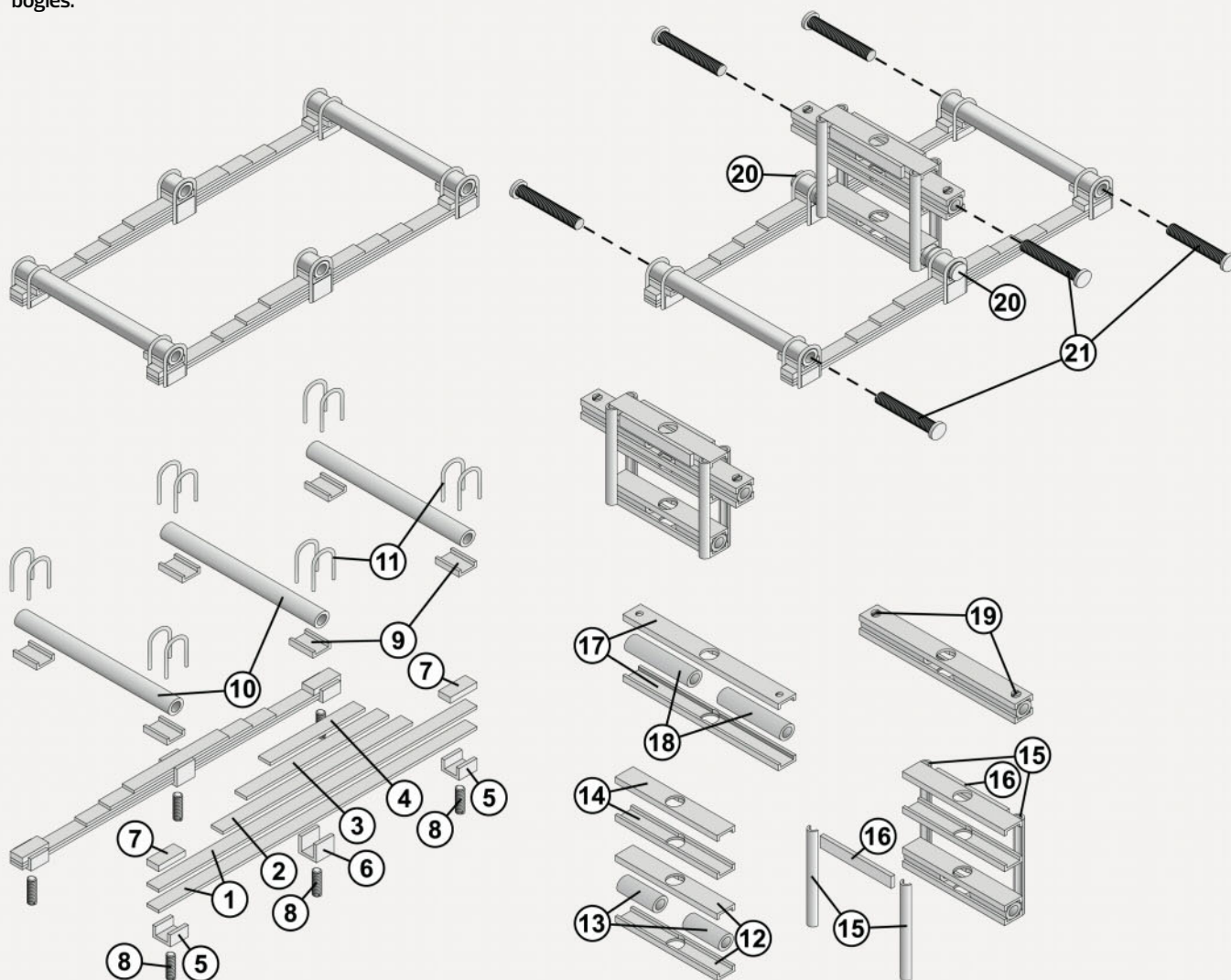
... of brass tube measuring 2.5x1.6mm are fitted (L'Octant, ref. P1247). Not having the necessary knowledge to scratchbuild a copy of a miniature motor, I scavenged a fairly similar one off another Harley-Davidson bike, a 1909 « Twin D V-Twin », again a Maisto model in 1/18 scale. I modified it very slightly to fit it to the front of my motor-trolley.



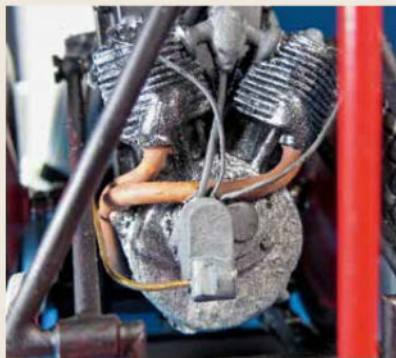
Recuperate the motor.

5 This 1909 « Twin D V-Twin » Harley-Davidson supplies us with its motor. The frame will have to be cut to recuperate it.

Lits of parts
needed for
building two
bogies.



ASSEMBLY

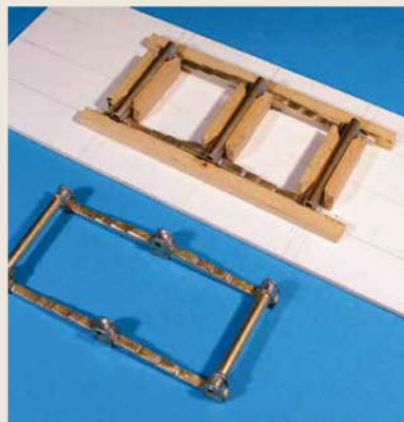


6 The lower part of the motor is filed down to give it a curved shape (preferably more accurately than on this shot!). The exhaust pipes are made out of 1.5mm brass wire and the fuel lines out of 0.5mm wire. The fixing hole, located at the rear, is drilled and tapped to M 3mm.



The bogies

To ensure greater sturdiness, the various parts, all from L'Octant (**see drawing 1**) are made out of brass strips and rods, soldered together. The bogies can also be built out of plastic, as suitable strips and rods are available in this material. The holes on the U strip girders **n° 9** are drilled to a diameter of 3mm. On one of the two bogies, the holes on cross-beams **n° 12** will be slightly ovalized to provide a three-point support.



7 The assembly of the various parts of the suspension will be made using a template.

The wheels, both for road and rail use, revolve on axles made out of screws **n° 21** whose heads are thinned down to remove the slot, by turning them on a mini-drill. These screws are themselves blocked by the grub screws **n° 8 and 19**. Washers are inserted to ensure proper gauging of the wheels. For running the model on 45mm gauge track, 6.5mm long spacers are made out of 2.5 x 0.45mm brass tube and fitted to axles **n° 21**). ...

Part n°	Designation (Dimensions in mm)	Necessary length (mm)	Qty.	L'Octant ref.
1	Thin metal strip 0.5 x 2.0	54	8	P 350/2.0
2	Thin metal strip 0.5 x 2.0	32	4	P 350/2.0
3	Thin metal strip 0.5 x 2.0	24	4	P 350/2.0
4	Thin metal strip 0.5 x 2.0	16	4	P 350/2.0
5	Brass U strip 2.0 x 3.0	2.5	8	P 1207
6	Brass U strip 3.0 x 3.0	2.5	4	P 1185
7	Brass flat strip 1.0 x 2.0	5	8	P 1444
8	Steel grub screw M 1.6 x 4		12	V 451
9	Brass U strip 1.0 x 3.0	5	12	P 1204
10	Brass tube Ø 2.5 x 0.45	26	6	P 1247
11	Brass rod Ø 0.5		24	P 603
12	Brass U strip 1.0 x 3.0	18	4	P 1204
13	Brass tube Ø 2.5 x 0.45	7	4	P 1247
14	Brass U strip 1.0 x 3.0	18	4	P 1204
15	Half-cylinder brass tube Ø 0.75 x 1.5	16.5	8	P 2131
16	Thin metal strip, 0.5 x 2.0	14	4	P 350/2.0
17	Brass U strip 1.0 x 3.0	26	4	P 1204
18	Brass tube Ø 2.5 x 0.45	9	4	P 1247
19	Steel grub screw M 1.6 x 4		4	V 451
20	Steel screw with cylindrical head M 1.6 x 20		4	V 320/A
21	Steel screw with cylindrical head M 1.6 x 20		12	V 320/A



8 For the axles, the tubes and the U strips are slightly too long, they will be filed down to measure once soldered.



9 Assembly method for the suspension bracket.



10 The rear bogie in place on the motor-trolley.

Belt housing

Unlike the road versions of the Hélica, whose propeller was fixed directly to the engine shaft, the rail version had the engine located in a lower position, with a belt (or chain?) drive to the propeller, protected by a housing consisting of two half-shells.

I had considered such an arrangement on my model, but after making some tests with gears, I realized that the energy

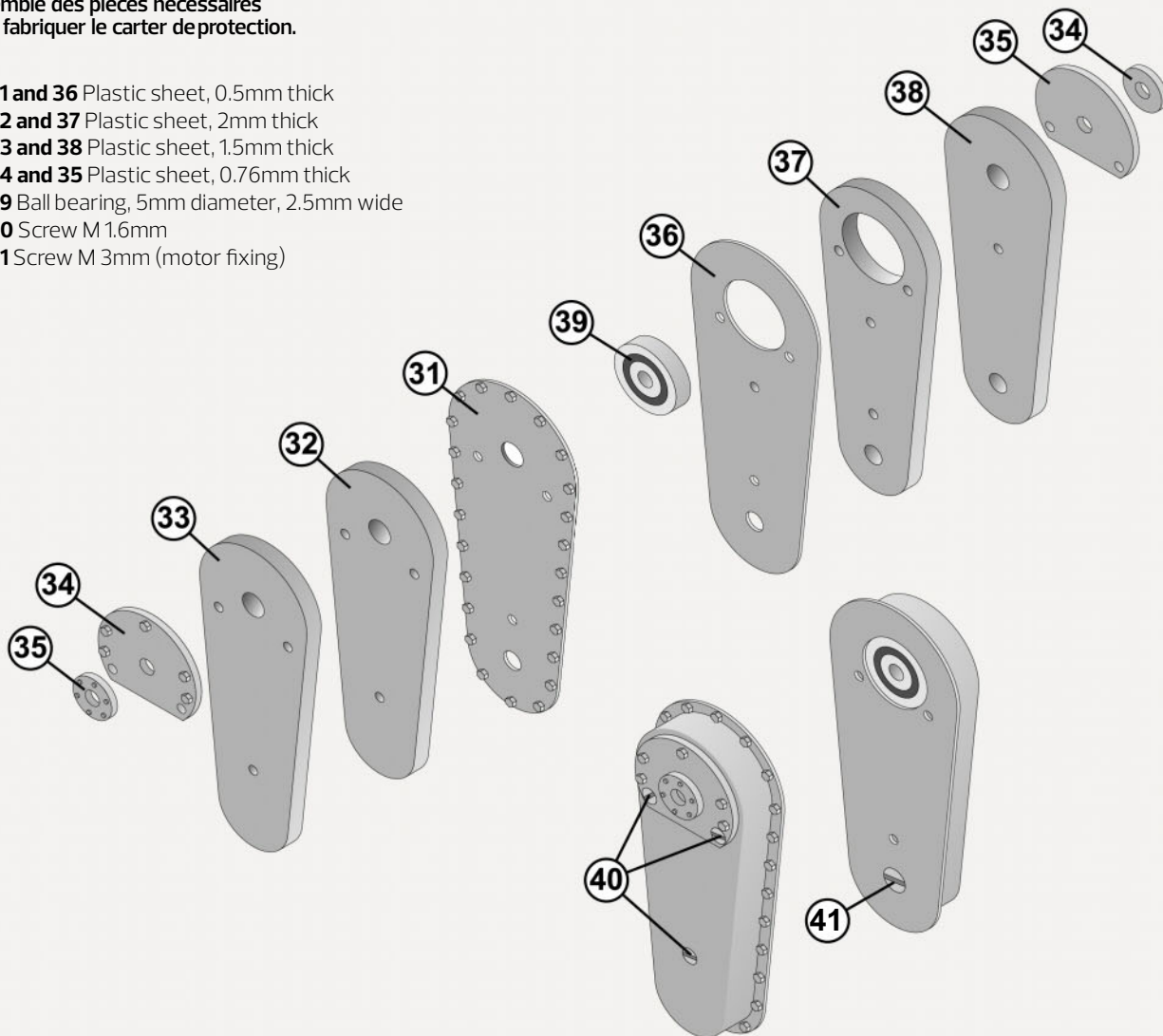
absorbed by such a system was too great. The transmission shaft therefore runs through the petrol tank.

It is this housing (shown in detail in **drawing 2**) which holds in place the front pivot, the propeller casing and the propeller driving shaft.

The plastic parts are made from **plate 2 (see central folder of VL87)**. The final part is fixed to the chassis with two M1.6mm screws which fit into the front bracket.

Ensemble des pièces nécessaires pour fabriquer le carter de protection.

- N° 31 and 36 Plastic sheet, 0.5mm thick
- N° 32 and 37 Plastic sheet, 2mm thick
- N° 33 and 38 Plastic sheet, 1.5mm thick
- N° 34 and 35 Plastic sheet, 0.76mm thick
- N° 39 Ball bearing, 5mm diameter, 2.5mm wide
- N° 40 Screw M 1.6mm
- N° 41 Screw M 3mm (motor fixing)



MACHiNiNg



11 Parts n° 32, 33, 37 and 38 are machined together: first roughly using a milling tool fitted to a vertical drill, then finished off by filing. Part n° 37 is fitted with a 5mm diameter and 2.5mm wide ball bearing for a 2mm axle (Micro-Modèle ref. SE K2).



Assemble both halves of the housing temporarily.



12 The two halves of the housing are temporarily assembled using M 1.6mm screws, which makes it possible to cut parts n° 31 and 36 to the same dimension.

The bolts on both sides are evoked using 1mm hexagonal plastic strip (Evergreen ref. 873). Each length of strip is cut to a length of ca. 3mm, glued in place, and then cut off to 5mm once the adhesive has set. The small bolts can be represented by 0.5mm hexagonal strip (Evergreen ref. 871) or simply by round strip (Evergreen ref. 218).



13 The pivot bracket (in the middle) is made out of 2mm thick plastic sheet. It is glued onto part n° 33, at the height indicated on the template. The pivot is held in place in the bracket by an M 1.6mm grub screw.

Bogie pivots



14 The front pivot comprises a length of 2.5 x 0.45mm brass tube (L'Octant ref. P 1247), 25mm long, onto which a 3 x 3mm U strip, 6mm long, is soldered (L'Octant ref. P 2185). A 2.2 x 5mm washer (L'Octant ref. V 194, re-drilled to 2.5mm) is soldered beneath the U. The tube is tapped to M 2mm in its lower part to hold the rear bogie using a 2mm screw (L'Octant ref. V 322). Likewise for the tube of the rear pivot. The nut visible on the photo serves only as a spacing washer.



15 The rear pivot is made out of brass. It consists of a length of 2.5 x 0.45mm brass tube, 38mm long, soldered onto a 25 x 10mm rectangle, 1mm thick, whose template appears on **plate 3 (see central folder of VL87)**. This pivot is reinforced by loops of 0.5mm diameter wire. The assembly is fixed to the rear of the chassis by three M 1.6mm screws. The two rods are made out of 0.2mm thick brass, they are not fixed to the chassis.

TO BE CONTINUED

A plastic sheet construction site trailer

During outings and walks, you often come across something you'd like to model. Such was the case for this simple-looking construction site trailer.

Text and photos: Christophe Deblaère

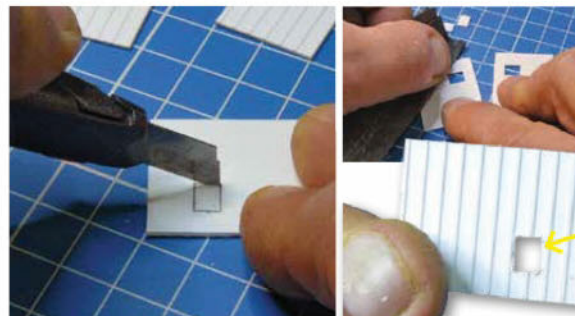
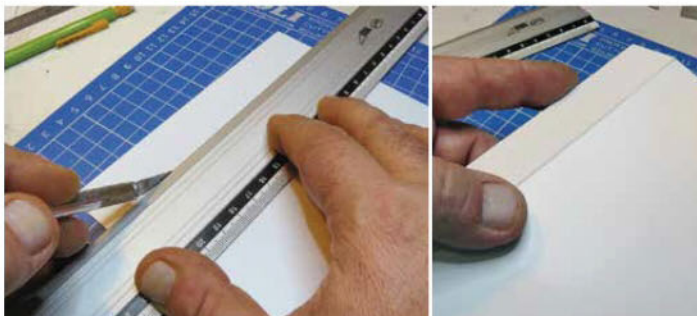
**MADE
IN
PLASTIC
SHEET**



Some pieces of plastic sheet, a few strips, simple tools... Discover the joys of this tiny scenery model, a construction site trailer.

Supplies

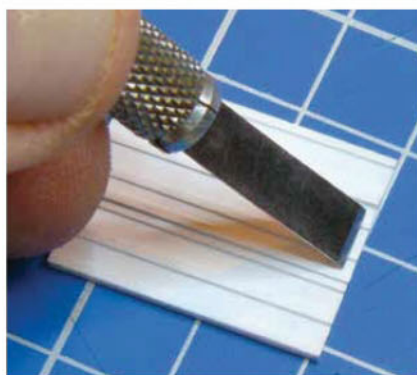
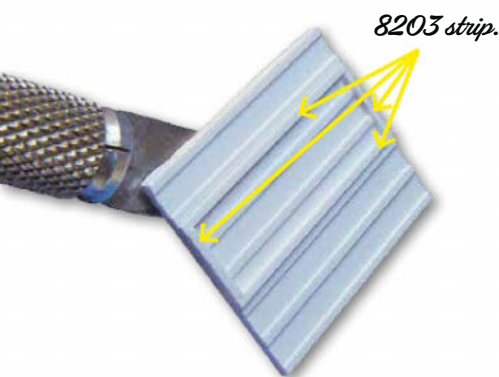
Plastic sheet: Evergreen (ref. 4544, 8203, 272)
Haxo Modèle rims and tyres (ref. 47027 and 47031)
Polystyrene cement (Tamiya with green top)
Instant adhesive
Q-tips
Spray-cans of primer and paint (AMF 87)
Straightened wire



1 In the Evergreen ref. 4544 sheet, cut two lengths of six intervals plus the outer ribs on a height of 2.5cm, and two lengths of 9 intervals plus the outer ribs, also on a height of 2.5cm. To make the cutting easier, mark the plastic sheet by running the cutter blade several times along the line, then fold the sheet until it snaps. The cut will be clean if the marking with the blade has been even.

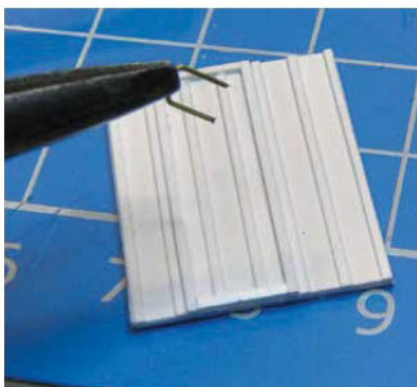
2 On the larger parts, and before assembling the body, cut out two windows. Cutting will be easier if it is done from the back, as the vertical ribs won't get in the way, but it will be harder to determine exactly where the windows are located. The window dimensions are ca. 6.4mm in width (the space between three ribs) and 7 or 8mm in height. This is far from crucial.

Cut the windows out with a scalpel, keeping the lines as straight as possible and finish off the job with a file to ensure that all four sides are properly squared. Never forget to gently sand the cuts with fine sandpaper (400 or 600 grain), as cutting always leaves a lip where the blade has been run.



3 Let's move on to making a mock door. There's no need to cut out a door just to blank it out afterwards. We'll use flat strip (Evergreen ref. 8203), placed and glued as shown in the photo.

4 For the upper and lower parts, the ribbing gets in the way. It must therefore be removed. To do so, use a flat blade (of the wood chisel type), this makes the work much easier.



5 This is the time to fit a door handle, made out of bent 0.3mm wire, after having drilled a suitably located hole. Apply the adhesive with a cocktail pick, for better accuracy and dosing. I fitted two handles (one for closing the door, the other for locking it).



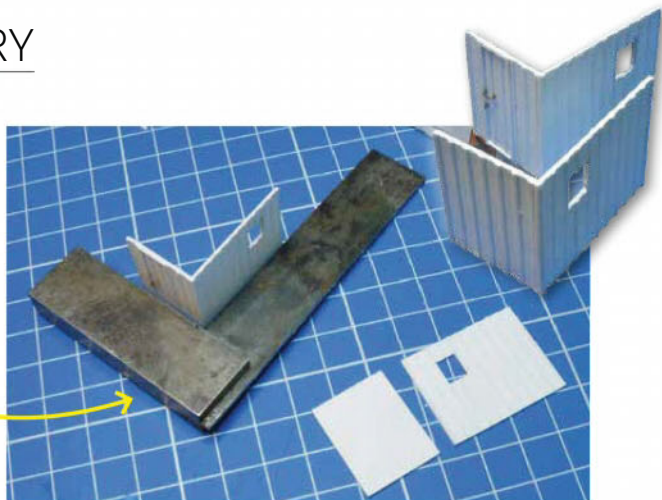
Taking measurements

If possible, take as many pictures as you can, from every angle, and to the extent possible from the front, don't hesitate to take measurements. And if you don't have a tape measure handy, use any item whose measurements will be easy to determine. In my case, a hiking stick. Simply remember which length it was adjusted to. Place it next to the item you are photographing and you will obtain the main dimensions using a few rules of three. A spot of logic and a Preiser figure will help you determine the missing values. My stick, once in place, provides a height of 2.20m and a width of 1.86m. If you count the gaps between each "rib" (this is actually embossed sheetmetal), the length (which I had not measured...) can easily be determined: 2.80m.



SCENERY

You must use a square for assembling the body.



6 Start by applying some adhesive to the edge, then apply immediately and firmly one of the long sides. Check the squaring and do likewise with the two other panels. Once the adhesive has set, assemble both halves. Make a floor to fit the body. Two

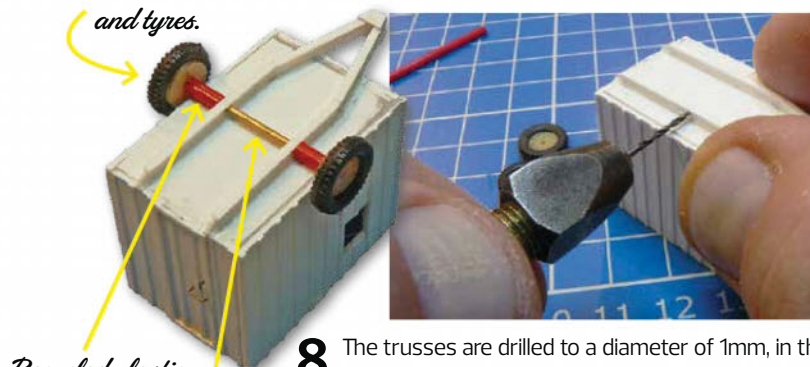
approaches are possible: the floor can slot inside the body (measure the inside, cut out the floor and glue it in place) or else an overlapping floor. The advantage of the latter method is that trimming can be done once the floor is glued in place, all four sides being accessible from the outside.

272 strip. Length 17mm.
272 strip. Length 25mm.



7 The trusses are made out of Evergreen I strip (ref. 272). Cut to length and glue in place. At the tip of the V where the trusses meet, glue two small pieces of plastic: one above and one below, just to finish off the job. Once again, a spot of filing once the glue has set will make everything look neat.

Haxo wheel rims and tyres.



Recycled plastic tube (Q-tip...).

Brass wire, 1mm diam.

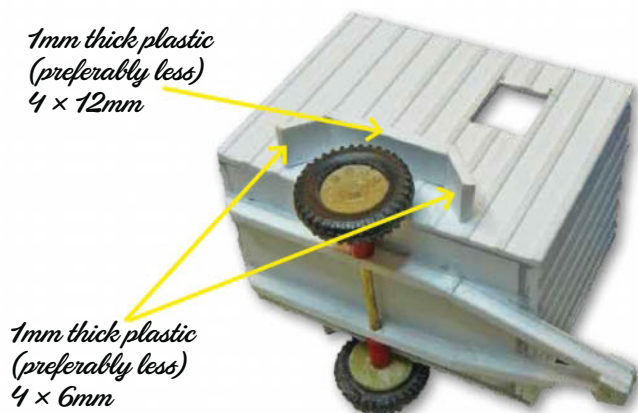
8 The trusses are drilled to a diameter of 1mm, in the middle. This is where the axle will be fitted. Two short lengths of tube, recycled from a spray-can tip or from a Q-tip, will be used as stops. Assemble the parts, and the axle can remain mobile if you haven't been too heavy-handed with the adhesive! Simply glue the wheel rims to each end of the axle and the job is done.



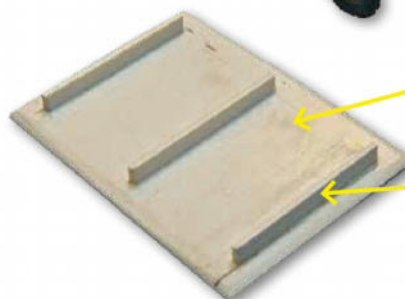
9 Shape a loop on a drill bit. Solder it to a piece of 1mm bent brass wire. Glue this assembly in a hole drilled in the end of the trusses. You have the tow hook.

1mm thick plastic (preferably less) 4 x 12mm

1mm thick plastic (preferably less) 4 x 6mm



10 Fit some mudguards: 4mm wide pieces of plastic, cut and glued in place. Go for 0.5mm thick plastic or even thinner if you can. Your work will look better than mine!



35 x 26mm rectangle, with beveled edges

1mm wide ribs Length 19mm

11 The roof is a simple rectangle (3.5 x 2.6cm, as it must extend beyond the body sides), with the edges angled and three reinforcing ribs fitted. Their length is equal to the inside width of the body. Naturally, these ribs are properly centered width-wise and at the right distance

from the edge of the roof. The roof remains removable, as glazing will have to be fitted once the trailer is painted. Clean, apply primer and then paint! Fit glazing from the inside, gluing it with vinyl adhesive. Finally, install your trailer in a suitable place on your layout.

0 SCALE FOR BEGINNERS

Universal skips

Pierre Fichet tells us with a few photos how he builds his 0–16.5 scale skips using plastic sheet and strips.

EN **12**
MAIN
STAGES

Texte and illustrations: **Pierre Fichet**

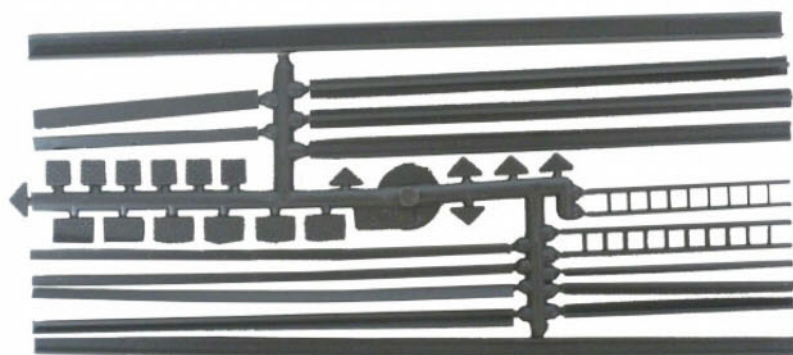


This simple construction project only requires a few Faller strips (réf. 540, easily replaceable by Evergreen or Plastruct references of equivalent section), a scalpel with a new blade, some polystyrene cement, paint and recycled H0 scale axles.

Supplies

Strips
H 5 x 4mm
I 4 x 2mm
T 4 x 3mm
L 2 x 2mm
1mm and 0.5mm thick plastic sheet

TECHNIQUE



- 1** The Faller ref. 540 strips used will be cut to the following dimensions:
H 5 x 3mm: twice 40mm long (**parts A**).
I 4 x 2mm: once 23mm long (**part B**), four times 12mm long (**parts C**).
T 4 x 3mm: twice 28mm (**parts D**), twice 22mm (**parts E**).
L 2 x 2mm: four times 12mm (**parts F**).

*Where the
parts belong*

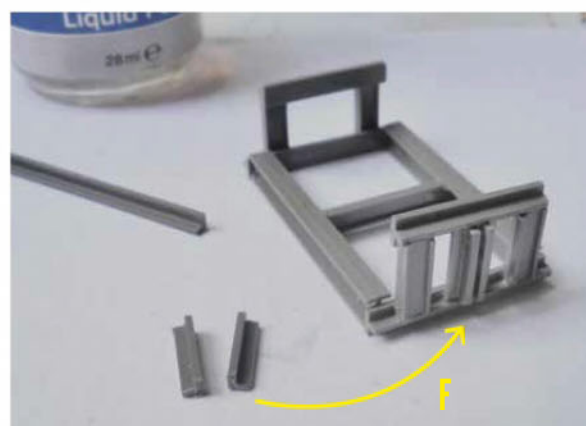
**THE PLAN OF
THE PARTS
TO BE CUT
IS AVAILABLE IN THE
CENTRAL FOLDER**



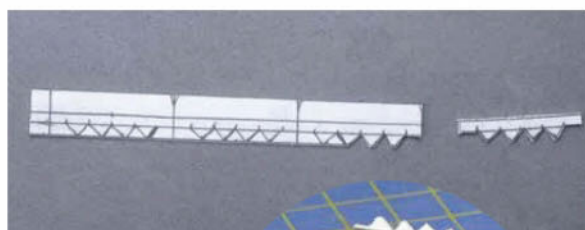
- 3** Glue **parts C** under **parts E**, then glue these assemblies, centered on **cross-beams D**.



- 2** The chassis, comprising **parts A and D**, is assembled square. **Part B**, cut out as shown in the photo, is glued in the middle.



- 4** Complete the assembly by gluing, on each side, two **L-girders F** back-to-back, spaced by 1mm.



- 5** Cut the end racks out of 1mm thick plastic card. Glue them onto **parts E**.



- 6** Using 0.5mm thick plastic card, cut two 5mm wide and 44mm long strips. Bend them into shape using your fingers. Glue them onto the chassis ends, overlapping the solebars by 6 mm.



7 Make 3mm cubes out of plastic sheet by stacking 3mm squares of 1mm thick plastic card. Using punches, cut 2.5mm diameter circles 1mm thick and 1.5mm diameter circles 0.5mm thick. Assemble them to make the four axleboxes. Drill out the rear of the axleboxes, to the diameter of your HO scale axles.



8 Glue the axleboxes, with the axles fitted, under the solebars. This is the best way to ensure perfect gauging of the axleboxes.



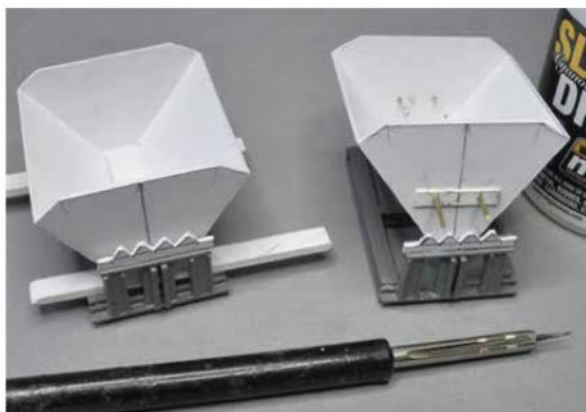
9 Out of 0.5mm thick plastic sheet, make the reinforcing struts that fit between the wings of the chassis H girder, level with the axleboxes. They will be trimmed back to the proper length once the adhesive has set. I use a resin that cures under UV light to represent the axlebox wings against the solebars. These parts can very easily be modelled using 2.5mm diameter quarter circles cut out of 1mm thick plastic card.



Once the adhesive has set, sand down the angles.



10 Cut the five parts of the skip out of 1mm thick plastic sheet. Glue them together.



11 Glue a 3 x 17mm strip of plastic sheet (0.5mm thick), 9mm from the bottom of the skip. Along the axis of this part, spaced by 8mm, glue two lengths of 0.7 or 0.8mm diameter brass wire.



12 Finish off the skip by gluing a 2mm flat strip cut out of 0.5mm thick plastic sheet all along the top edge. Glue two reinforcing strips along the skip, 10mm below the top edge.



Paint, weather, load... roll!

MAKING LIME!

In this feature, Vincent Lepais explains how a lime kiln operates. Such facilities were widespread throughout France, given the multiple applications of lime.

We have added a small four-sided layout project, with an industrial line linking a stone quarry to a lime kiln. An opportunity for running strings of laden skips.

A TYPICAL LIME KILN:

BOIS GACHET43

THE SALAMANDER QUARRY

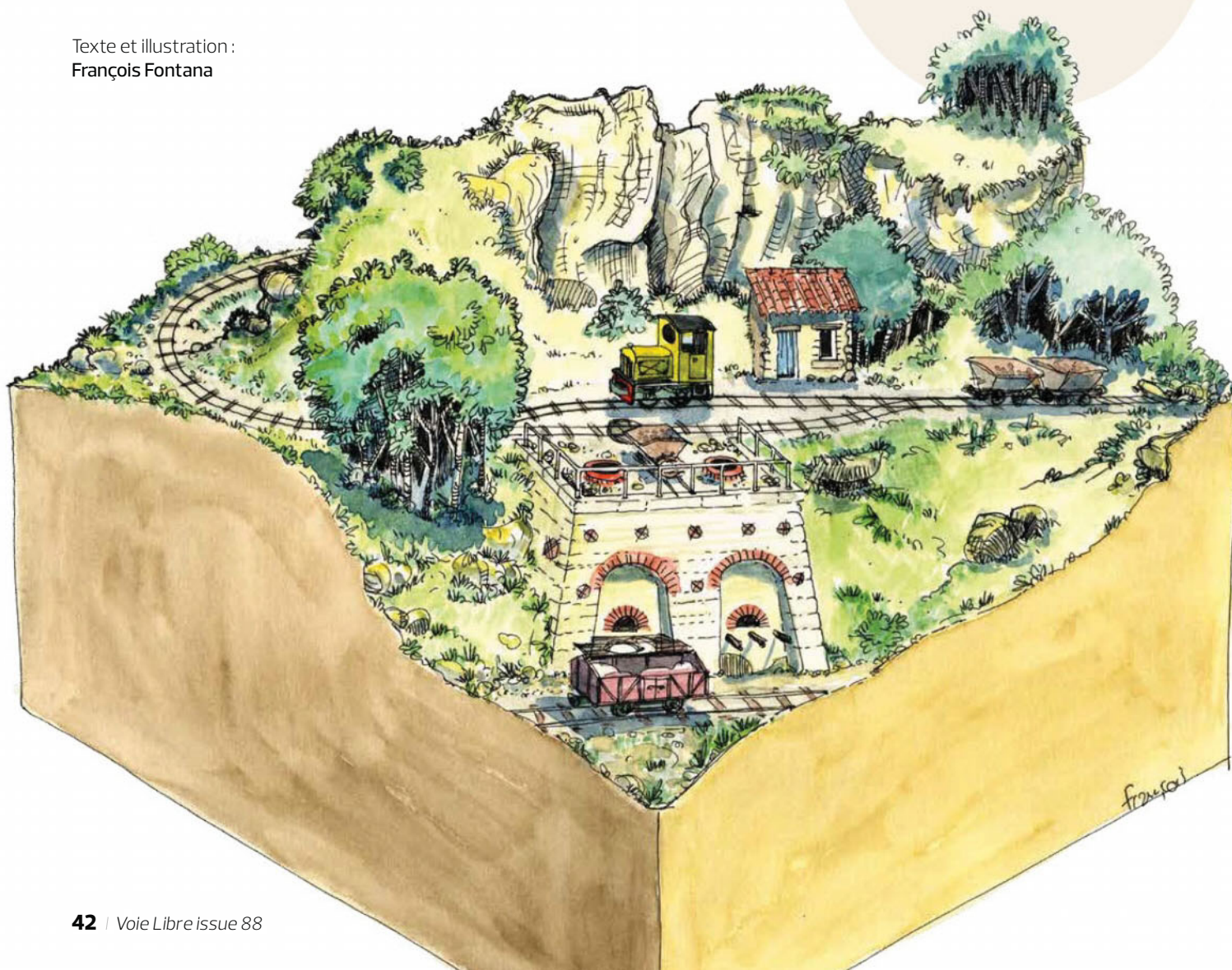
AND LIME KILNS48

FOLDER OF DRAWINGS :

BOIS GACHET LIME KILN

OPEN WAGON TK 301 TO 333 SERIES

Texte et illustration :
François Fontana



The Bois Gachet lime kiln, A.K.A "BRAS DE MER"

After having explained how a mine shaft operates (see *Voie libre* 86), Vincent Lepais now tells us how lime was made all over France.

Text and photographs (unless otherwise mentioned): **Vincent Lepais**,
Drawing: **François Fontana**

The purpose of this layout project is to combine narrow gauge with meter gauge or standard gauge track. The Bois Gachet lime kiln, located alongside the meter gauge Blanc-Argent (BA) line in central France, right next to a level crossing, is a good example.

It can be combined with the mine shaft project described in *Voie Libre* n° 86, not only because it is contemporary, but also because lime kilns are large users of coal. Below are all the general explanations needed to create your very own project.

AT BOIS GACHET

Let's travel to Varennes-sur-Fouzon, in the Indre departement of central France. On 6 November 1902, the Romorantin - Ecueillé stretch of the Blanc-Argent meter gauge line was inaugurated, and Varennes is located on this section. A goods train has just arrived in the station and a Buffaud & Robatel 0-6-0 T steam locomotive of the BA shunts coal-laden open wagons backwards up the line to the kiln siding. Once empty, they will remain on-site to be filled with lime.

LOADING

The kiln features two chambers, filled from the top with chalk and coal. This job is made easier by having the kiln built up against a hill. Skips running on 50cm gauge Popineau track (with lightweight 6kg/meter rail) are used. A photo shows an Orenstein ...



This overview shows the location of the kiln, which backs on to a hill. The top of the kiln featured railings to protect the workers.
28 February 1998.



The South side of the kiln with the Blanc-Argent line in the foreground. The kiln has the appearance of a large block of masonry. 28 February 1998.

CHALK AND COAL

... & Koppel 0-4-0T (50hp type or similar) in service in the quarry. Did it also run on 50cm gauge track? Many thanks to whoever can provide additional information on this engine! In scale form, you now have a first small, independent, layout.

UNLOADING

As it calcinates, the lime drops through grates located in the lower part of the kiln. It is packed into sacks by men working on floorboards supported by old rails and I girders, located just below, and above the wagons parked on the private siding (TK type open wagons and N type flat wagons of the BA). The siding extended beyond the front of the kiln, leaving space for an additional two wagons in addition to those being loaded.

A postcard shows a string of nine wagons awaiting departure, including two TK open wagons. One wagon used to leave the kiln every day.



To withstand the high temperatures that would otherwise split the masonry, the kiln is reinforced by metal stays, whose anchors on the front of the structure are clearly visible. 28 February 1998.



Under the segmental arched openings, the stokeholes are visible. The two cart axles, embedded in the masonry, used to support the grate. A length of narrow gauge Popineau track, dumped into the kiln, has been caught up by one of the cart axles. 28 February 1998.



Another type of structure, but serving the same purpose, the Rochats lime kiln at Mauvières in the Indre. The lime is dumped out of the kiln into the loading chutes installed at the foot of the building. 10 February 1990.

WHAT IS LIME?

Lime is one of the oldest forms of industry, dating back to Antiquity. Once quarried, chalk is exposed to temperatures ranging from 900 to 1200° C, a process which generates a lot of CO₂, both from the fuel and from the chalk during its calcination. The result is a powder which, depending on its chemical properties, can be used as an agricultural fertilizer, for making mortars, rendering and whitewashes, but also as a smelting agent in the steel industry. Bales of wood or coal can be used for combustion. The inside of the kiln is coated with a refractory material, the «sleeve», which must sometimes be partially or completely repaired if an incident occurs during the burning!



The lime kiln at La Veurière near Angrie (Maine-et-Loire).

Raymond Duton

DESCRIPTION OF THE KILN

The body of the kiln is built of stone blocks assembled using lime mortar, and featuring toothed quoins. The overall shape calls on angled walls (with a slope of over 30°). The masonry work is held in place by two rows of anchors and metal stays distributed over the surface. The stokeholes are located at the foot of the structure, with brick segmental arches. They are closed by removable grilles placed on old cart axles cemented into the masonry work. The circular feeding mouths are level with the top of the structure. Railings used to surround the top of the kiln, but have mostly vanished.

The structure was erected against a ramp, reinforced on either side by buttresses and retaining walls, also made of cut stone, leading up from the quarry. A Popineau track was laid along the ramp, allowing for skips to be used. The trackplan is based on the kiln located at Terriers de Neuville, near Chas-seneuil (Indre), whose architecture and size were similar, and where the tracks were still in place. At Bois Gachet, they were lifted and stacked on the feeding mouths to close them off. It would seem that ■■■



TK 316 open wagon seen at Valençay in April 1988. Wagons of this type were used to ship in the coal used for cooking the chalk and to ship out the lime.



Terriers de Neuville lime kiln at Chasseneuil (Indre). The emptying platform is clearly visible. 11 November 1989.



Another country and another type of construction, but the principle remains the same. Saxony (22 June 2015).

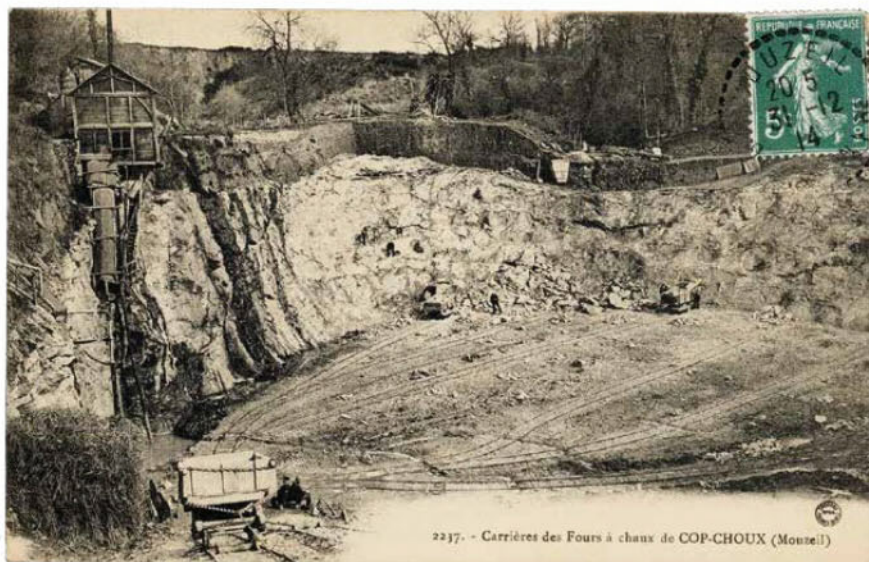
IN SAXONY

... the kiln described here was built around 1910, with the complete facilities featuring two units. Operation ended in 1955.

ALL OVER FRANCE

Very few French départements didn't feature lime kilns, whose architecture and size could vary considerably, ranging from small artisan-scale installations such as those found at Ecueillé or Saint-Gaultier Puyrajoux in the Indre, Neung-sur-Beuvron or Chaumont-sur-Tharonne in the Loir-et-Cher, to large kilns such as those located at Beffes, La Guerche or Lunery in the Cher, Montluçon in the Allier, Lhonnaizé in the Vienne (the latter belonged to Faymoreau mines and was connected to the P.O. line nearby via a modest 50cm gauge track)...

The narrow gauge networks were proportionate to the size and scope of the kilns, and this opens up a wide range of possibilities to modellers wishing to include this type of industry on their layout. You may therefore feel free when evoking this topic, while remaining consistent and realistic! Remember to draw on the documentation available on Internet as an additional source of inspiration.



Vintage postcard. Raymond Duton collection.

Mouzeil, Loire Atlantique, the Cop-Choux limestone quarries.



Raymond Duton

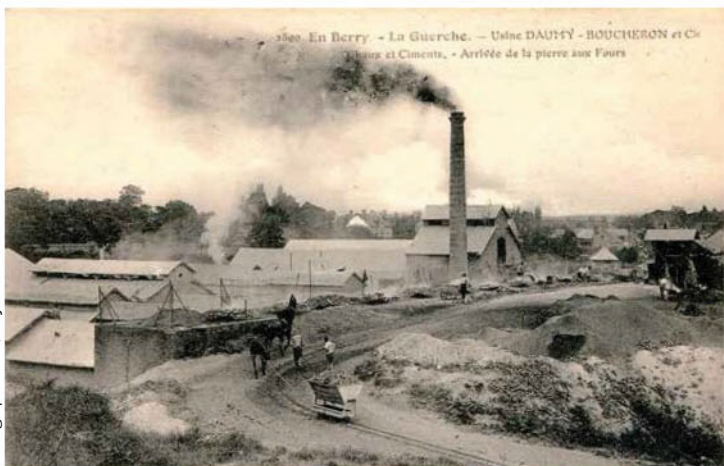


Vintage postcard, Vincent Lepais collection.

The lime kilns at Vendenesse-les-Charolles. In the foreground, a closed van used for shipping the sacks.



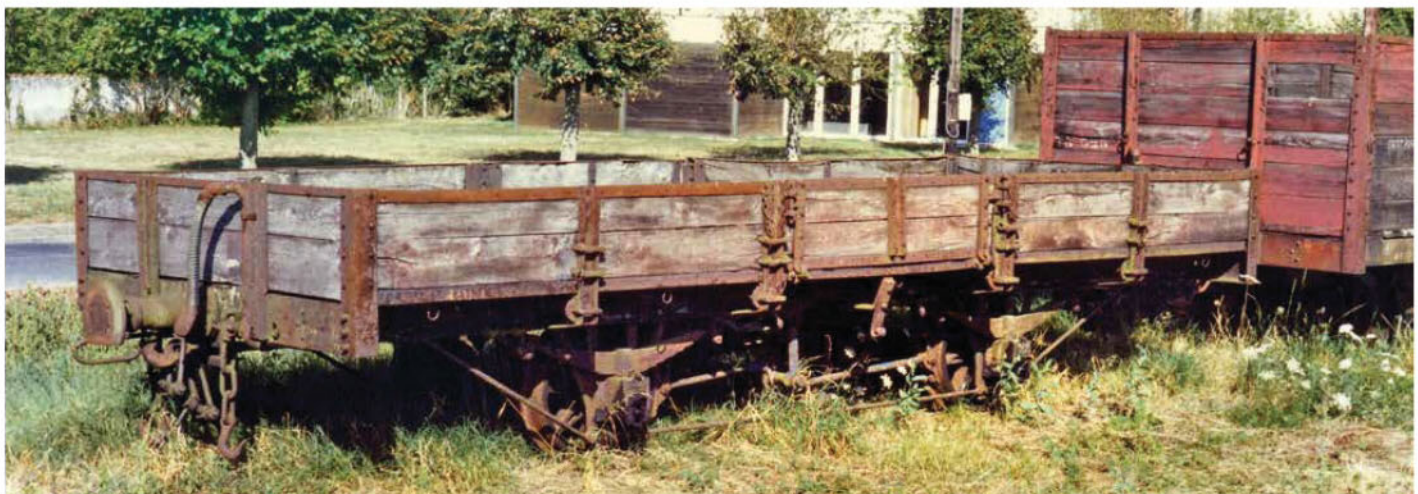
The kilns at Vendenesse-les-Charolles today.



Vintage postcard, Raymond Duton collection.

La Guerche, Cher département, the skips are hauled by horses from the quarry to the Daumy-Boucheron factory kilns.

Flat wagon N 401 photographed at Argy in the Indre on 27 August 1988. Ideal for carrying sacks of lime.

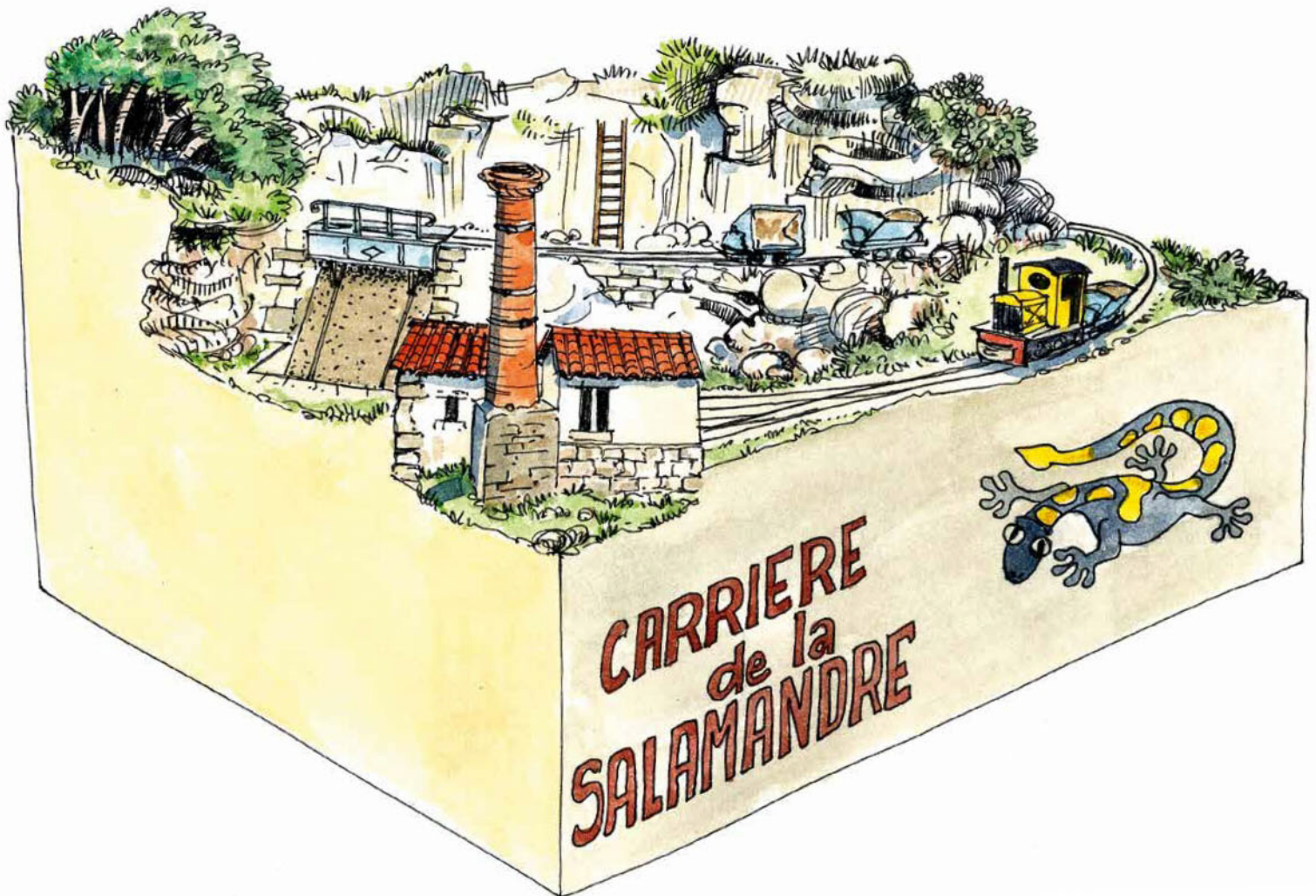


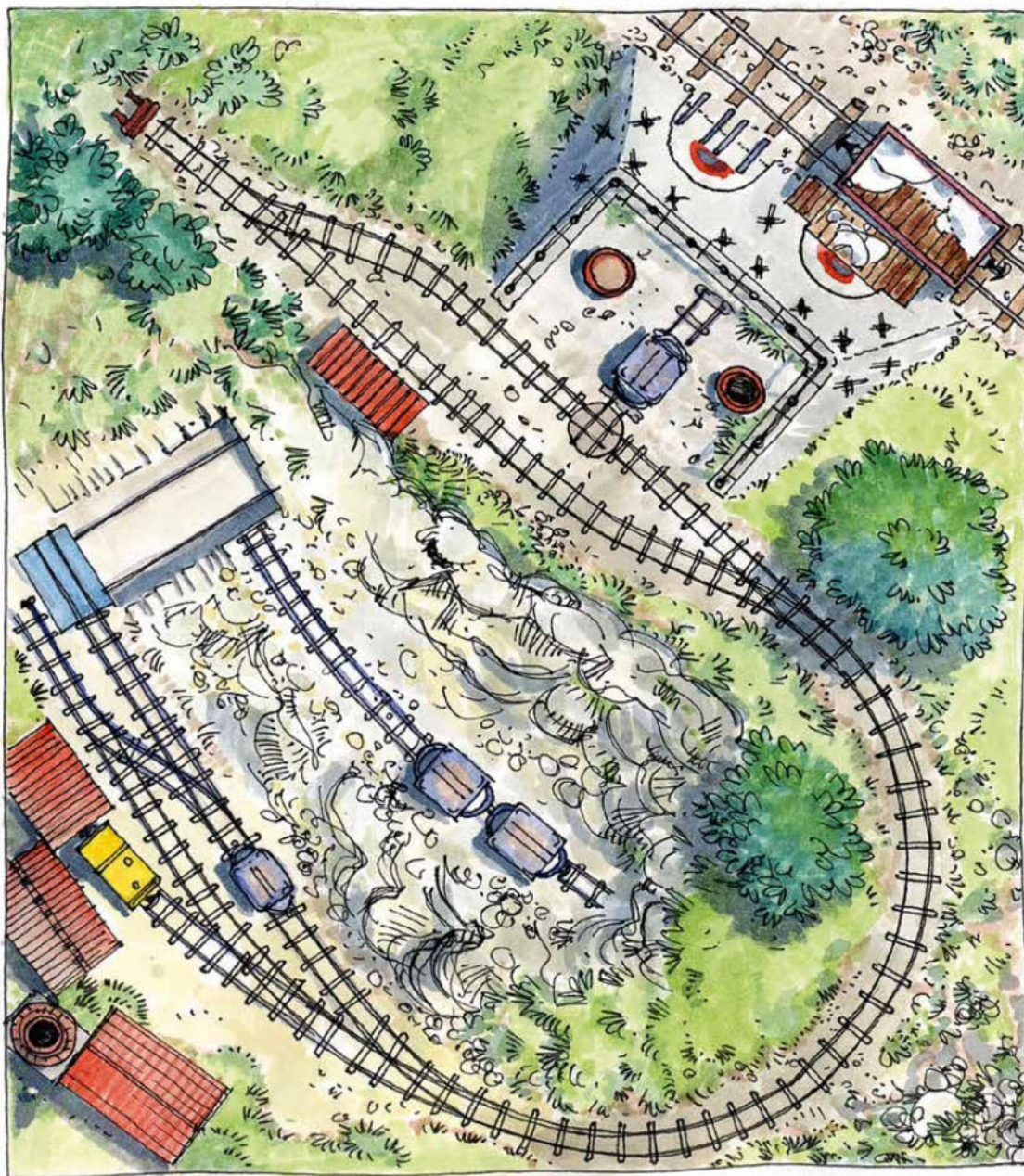
The Salamander lime kilns

Project Layout

From the stone quarry to the lime kilns, the endless shuttle of skips hauled by a small diesel or steam locomotive. Here is a compact and fun-packed project, visible from all four sides... Grab your tools!

Text and illustrations: François Fontana





The layout is separated in two by a scenic divider, which quite simply is the hill. On one side, the quarry, cut into the hillside, the ideal location for installing a small traverser or incline. In the foreground, the workshops required for the company and the daily tasks of the quarrymen. The line then leaves the site, runs round the hill and reaches the twinned lime kilns, built against the other side of the hill, alongside the meter gauge railway. An open wagon is being unloaded in the foreground. The hill is reduced in depth, so this part of the scenery will have to be dealt with as a *trompe-l'œil*.

COMPACT DIMENSIONS

If you opt for 9mm gauge track, in H0/00 scale or in 0 scale, you can use very tight 15cm radius curves, meaning the layout will fit into a square with 60cm

sides. If you go for 16.5mm gauge, in 0 scale or in 1/35 scale, the minimum radius will be 25cm, and the layout will fit into an 80cm square. In both cases, we have used Peco track and the smallest turnout radius: 22cm in 9mm gauge and 44cm in 16.5mm gauge.

Naturally, these dimensions imply using compact rolling stock with short wheelbases. Four-wheeler diesel or steam locomotives, skips and trucks connected by chain links.



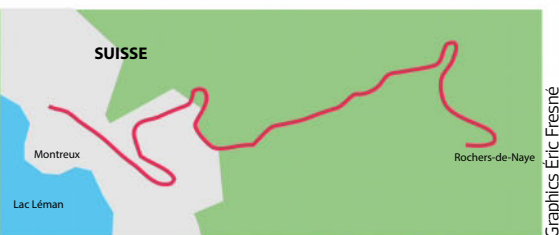
Meeting at Glion. To the right, motor unit MGN ABhe2/4 201 to 208. To the left, a special steam train bound for Rochers de Naye, with the Brienzen-Rothorn Bahn (BRB), ex-GN, locomotive. **10 June 1988.**

Reaching the top

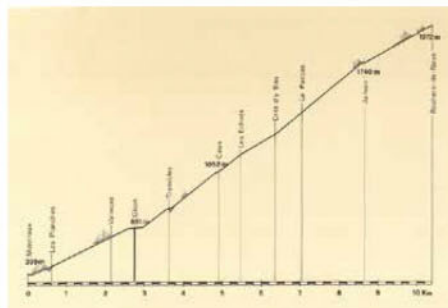
AT ROCHERS DE NAYE

In the late XIXth century, the influx of tourists keen on enjoying the delights of the Swiss Alps led to the construction of rack railways, thus easing access to high altitude viewpoints.

Text and illustrations (unless otherwise mentioned): **Jean-Louis Rochoix**



Map of the line



Gradient profile of the line.

At an altitude of 2042 meters (ca. 6,100 feet), the summit of Rochers de Naye was no exception. This was how the Glion - Naye (GN) line came into existence in 1892, providing a connection at Glion with the Territet - Glion (TG) funicular.

Two companies, two lines

Access from Montreux was awkward, requiring several changes of trains. This soon led to consider building a Montreux - Glion (MGI) line with the same technical features as the GN: 80cm gauge track, twin-bladed Abt type rack. The line was inaugurated in 1909. While gradients on the GN reach 225‰, those on the MGI do not exceed 130‰. Right from the start, both lines were operated by separate companies: the first using steam motive power until 1937 and the second electrical haulage from the outset. It was only in 1987 that both companies merged under the name of MGN (Montreux-Glion-Naye).

Steam makes a comeback

Director E. Styger wished to reinstate steam-hauled Sunday passenger services on the Caux - Rochers de Naye stretch. To this end, the company bought a modern SLM steam locomotive, taking advantage of a joint order with the Brienzen-Rothorn Bahn (BRB), also in 80cm gauge, and the Austrian meter gauge Schafbergbahn line. The steam service operated from 1992 to 2000. Afterwards, the steam engine was unfortunately sold to the BRB to finance the construction of the marmot park at Rochers de Naye.

Stock

Currently, the company operates the following driving units: three vintage four-wheeler units, Bhe2/4 203, 204 and 207, used for peak period traffic. Five eight-axle articulated units, Bhe4/8 301 to 305, providing the basic service. One HGe2/2 2 locomotive, dating back to the opening of the MGI, presently out of order. Two mixed electric and diesel locomotives, HGem 2/2 11 and ...



G. Hadorn

A Montreux-Glion cable car

between Jaman halt
and the entrance
to the Rochers de Naye tunnel.

25 August 2007.



Inauguration

of electrical haulage.

25 July 1938.



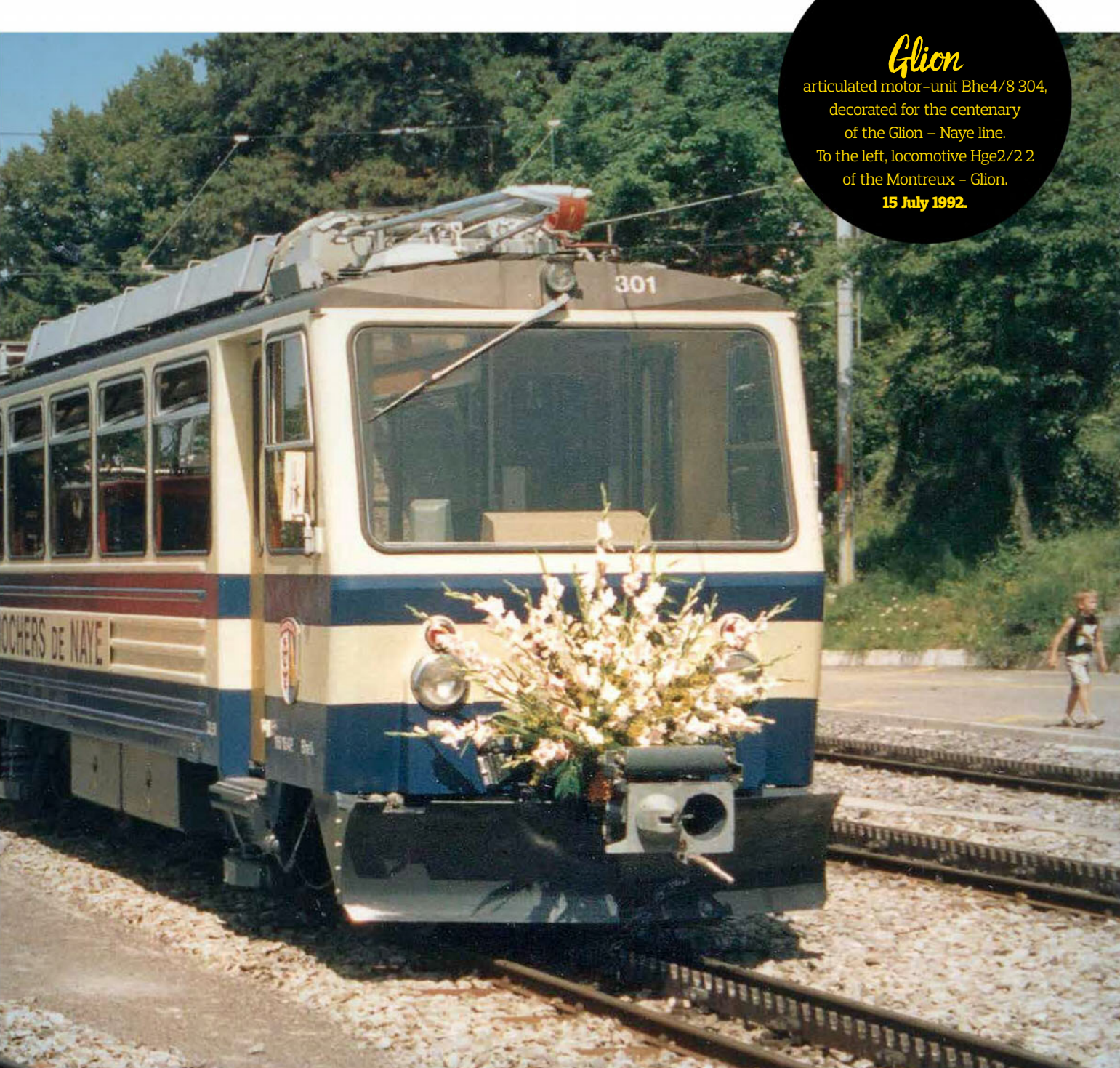
Caux. To the right, a motor unit bound for Rochers de Naye. To the left, a downhill train. Both are hauling trucks for carrying para-gliders, luggage and freight. **May 1984.**



The two motor units Bhe4/8 301 "Montreux" and Bhe4/8 304 "La Tour-de-Peilz" seen at Naye terminus. **3 July 2006.**



A special train seen at Paccot halt. **March 1984.**



Glion
 articulated motor-unit Bhe4/8 304,
 decorated for the centenary
 of the Glion – Naye line.
 To the left, locomotive Hge2/2 2
 of the Montreux – Glion.
15 July 1992.



Overview of the east end of Montreux station. To the left, three Glion – Naye motor units, one of which is just outside the entrance to the tunnel on the line to Rochers de Naye. To the right, MOB Be4/4 1001 motor unit, ex-Lugano-Cadro-Dino. To the far right, the start of the Montreux-Oberland Bernois line leading to the "Pays d'Enhaut". **4 April 1992.**



Bhe4/8 302 motor unit "Marmottes" ready to depart from Naye. **25 August 2007.**



Articulated motor unit Bhe4/8 305, built in 2009/2010 by the company using spare bogies for the Bhe4/8 301 to 304 series, seen at Glion. **30 September 2015.**

Postcard recalling the tourist nature of the Rochers de Naye line. The start of the sled run at Crêt d'y Bau. **Ca. 1900.**



... 12, bought in 2013 to haul work trains and if required the vintage carriages. Carriage and wagon stock comprises five vintage carriages, GNC 2, BC 16 and 17, MGI BC 2 and 5, as well as various wagons and trucks used for carrying luggage, skis and bicycles. Snowfall can be significant, so the company owns three snow-ploughs, including a new Xrote 4 rotary machine delivered in 2013, which carries out the lion's share of the work, propelled by a locomotive.

High, high the mountain peaks

In 1983, the company opened the « Plein Roc » restaurant which offers a panoramic view over the lake of Geneva. It can be reached easily from Naye station via a tunnel dug into the mountain, a particularly welcome feature in winter. Nowadays, Rochers de Naye can be reached either via Territet and the funicular, or directly from Montreux via the railway, calling on the way at Caux, headquarters of the foundation "Initiatives et Changements". Next to Naye station, it is possible to book an overnight stay in a yurt! Winter sports have developed in the sectors of Naye and of Jaman, but traffic remains busiest during the summer months. ■



The motor units, operating in MU mode, have just emerged from the Naye gallery. **7 July 2010.**

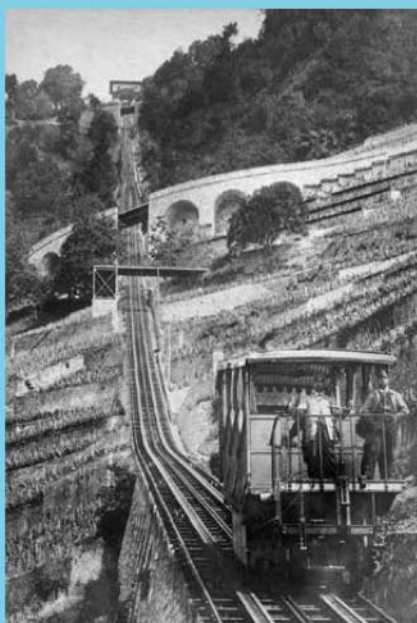
THE TERRITET – GLION FUNICULAR

TG is the four rail funicular connecting Territet (alt. 399m) to Glion. Built in 1883, originally using a water counterweight, it is fitted with a Riggerbach rack. It was modernised in 1974, becoming electrically powered and fully automatic.

Territet - Glion funicular

the midway passing point is located above the road to Glion.

Ca. 1890.



C. Marmillod



Arrival at Rochers de Naye. In the background, the station and the hotel. Motor unit in original livery. **29 December 2001.**

Steam train

arriving at Caux.

14 July 1992.



G. Hadorn

LOAD THE SKIPS

*Sand, gravel,
rubble, coal...*

For enhanced realism, Christophe Deblaère shows us how to paint, weather and load skips.

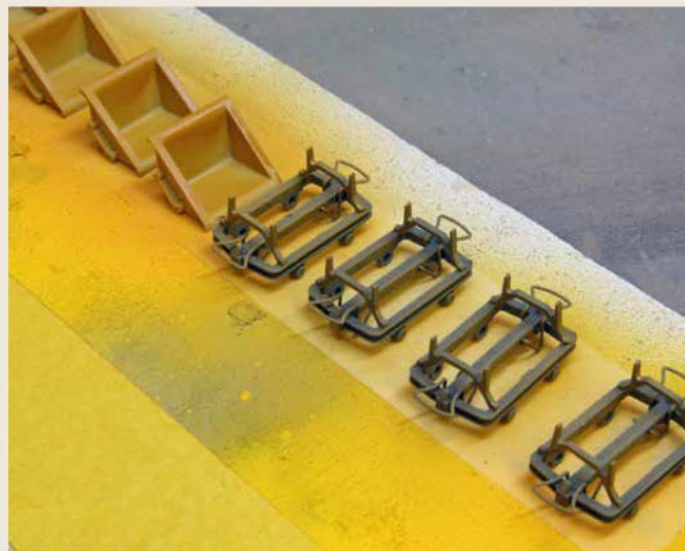
Text and illustrations: Christophe Deblaère



1 On a board, glue two lengths of two-sided adhesive tape. Dismantle the skips: body, chassis, axles. Place the parts on one of the adhesive strips. Don't use the other strip yet.



3 Once the first side is painted, turn the parts upside down on the other strip of two-sided adhesive. Paint with the same shade. There's no need to insist on painting all the nooks and crannies, it will be more realistic if the original colour shows through here and there.



2 Spray on the Railcolor mud shade, using an airbrush. Let the paint dry thoroughly. You can also use paints from the Decapod or Modelmates range. The latter are available in convenient spray cans!



4 Once the chassis are dry, I picked out the axleboxes with AK Interactive « Engine grime » (see issue 822 of *Loco-Revue* on the use of AK and Mig products).

FILLING THE SKIPS

When removing the bodies from the adhesive tape, glue will sometimes remain on the model. Remove it using a Q-tip dipped in a little F essence. Don't use acetone or alcohol, which dilute the paint and/or damage the plastic.



5 Resume painting, this time applying a rust shade. You don't have to paint the chassis, everything isn't rusty! Fit the axles back onto the chassis. I don't think it's essential to paint them. Don't fit back the bodies yet, they still require a bit of work.



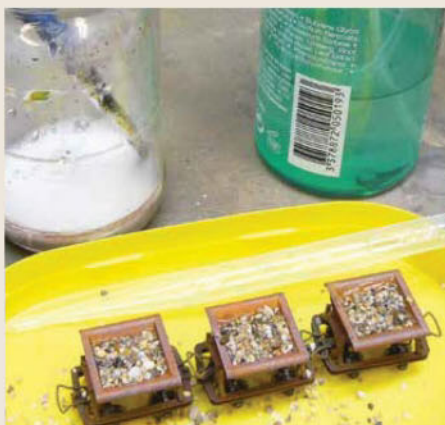
6 On your palette, prepare blends tending to a rust-like colour. You need brown, yellow and red. There's no need to buy all the shades in a supplier's range. Use white and black to lighten or darken a shade.



7 With a small wad of foam (make sure the texture is fine), lightly loaded with colour, apply touches of paint to the bodies haphazardly. Let the paint dry and start again with another shade.



8 Sift some sand and keep only the coarser grains. Naturally, you can load your skips with all kinds of other materials: coal, ballast...



9 Fill the skips, saturate the loads with a blend of alcohol and water (four-fifths of the volume) and white glue (one-fifth of the volume). Use a pipette.



10 Let the adhesive set. Dry-brush with a steel or aluminium shade around the edges of the skips. You can even paint the inside of the skip as far as the load.

Zwei Wochen, a stone-cutting Co-op!

THE MODELLER



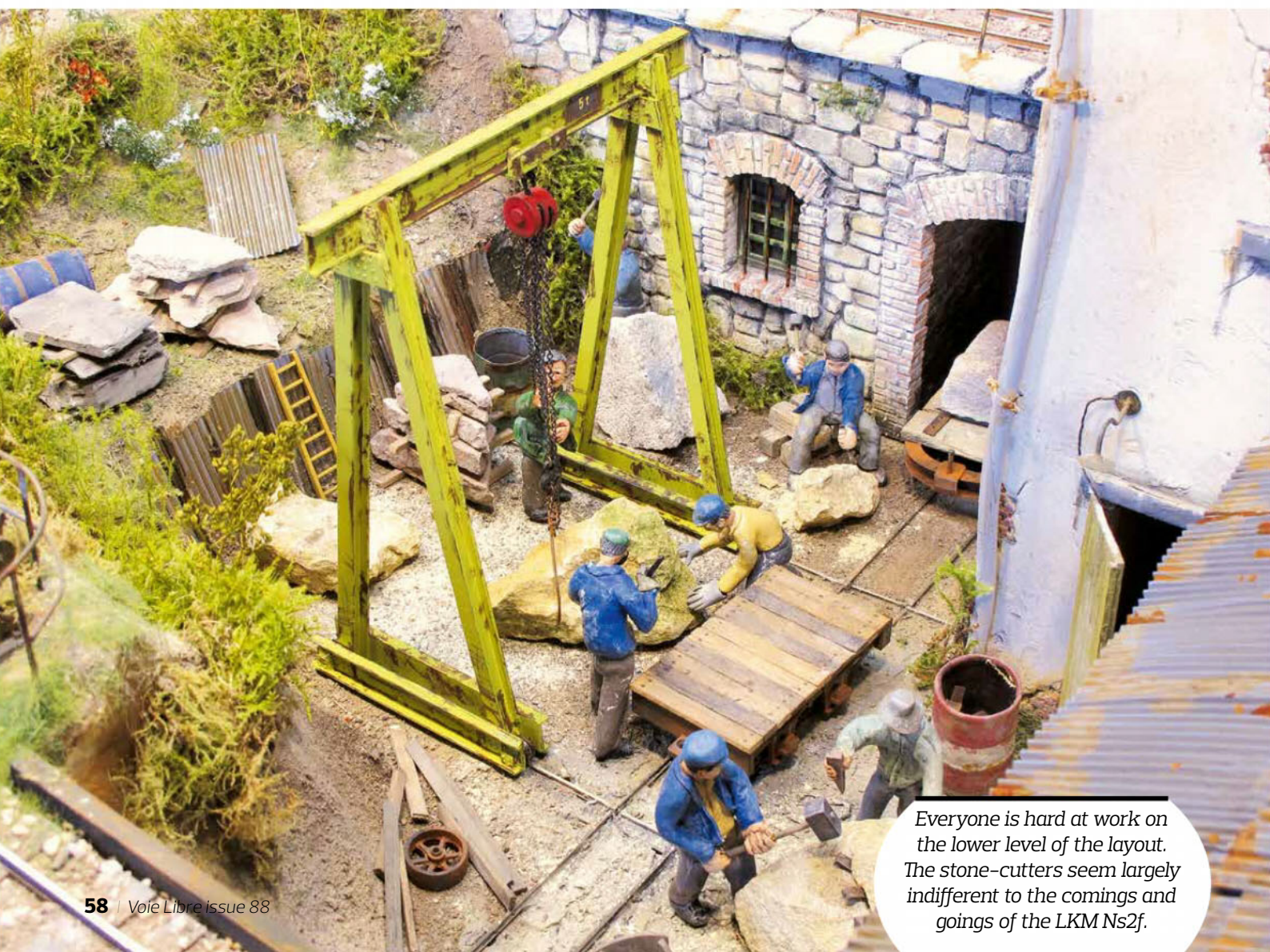
Bernard

Railway modelling has many sides to it. Bernard Junk puts a personal touch into his layouts which give each of them a unique flavour.

Text: François Fontana

Photos: François Fouger unless otherwise mentioned

Illustration: François Fontana

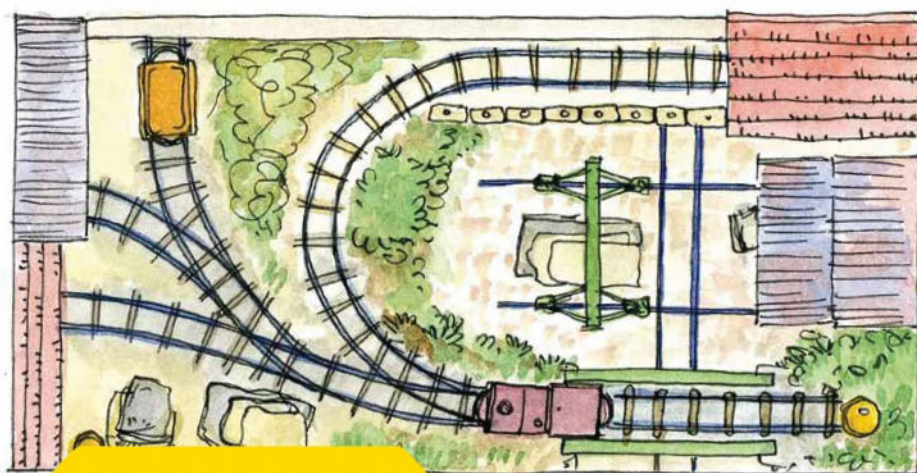


Everyone is hard at work on the lower level of the layout. The stone-cutters seem largely indifferent to the comings and goings of the LKM Ns2f.

Bernard Junk is something of a household name for a great many modellers: whether they have read an article about him or met him on a show, they know at first sight that what they are observing is part of a patiently built modelling opus, layout after layout. While watching the large 1/22.5 scale diesel locomotive shunting a stone-laden skip between the delivery building and the cutting shop, I recalled the incredible list of layouts, each one more personal than the next, created by Bernard over several decades of modelling life.

Two weeks

"VEB Baustoffkombinat zwei wochen", which could be loosely translated as "Two-week construction materials ..."



The layout at a glance

Scale: 1/22.5

Gauge: 26.7mm

Dimensions: 122 x 60cm

Control: digital

Layout Plan

After having reversed onto a short head-shunt, the skip will move into one of the cutting shops.



Bernard Junk



The diesel engine emerges from the delivery building with a skip loaded with a block of rough stone.

1/22,5 Layout

■■■ Co-op" is the slightly provocative name chosen by Bernard Junk for his latest creation. While he was planning to display a new layout at the Walferdange (Luxembourg) show, a technical problem caused the project to grind to a halt! Just two weeks before the opening of the exhibition, he had nothing to display. However, bowing out was unthinkable, as the organizers were expecting him. That was when the creative process kicked in. Bernard thought of various alternatives, looked at what was to be seen in shop windows, considered various sources of inspiration... He focused on an LKM Ns2f diesel from the Präzisionsmodellbau Rudolf Heinrich range in 1/22.5 scale. This engine

would take center stage on the future layout. To change the atmosphere a bit, Bernard opted to build a stone-cutting facility. Ideas were soon flowing: a two-level layout, the engine would need to shunt, sound was a must... So, let's leave Bernard tell us the rest of the story and something about his creative processes.

Bernard Junk: Here is the layout. A spot of technical information: the measurements are 1.22 x 0.6m, the track gauge is 26.7mm, which is the exact width of prototype 60cm gauge track reduced to 1/22.5 scale. All the track and the three turnouts are scratchbuilt from copper-clad epoxy

sleepers and code 100 rail. The engine is fitted with sound recorded from the prototype. Except for the locomotive, everything is scratchbuilt. However, the layout as you see it here has changed a bit since the Walferdange show. I have added many details and the company has hired a number of extra workers since I first displayed it!

François Fontana: How do you proceed to create a layout?

BJ: I start by looking for an idea that catches my fancy, something I have never seen before. Then, I figure out what the stage movements will look like, what parts I will get my trains to play. The basics remain



Even though he scratchbuilds a lot, Bernard does buy some details off-the-shelf: spanners or drums, for example, but they are all repainted to match the remainder of the scenery.



One cubic meter of stone weighs in at 2.5 tons, quite enough for lightweight 60cm gauge track!



We are here under the bridge, with a view over the stone-cutting shop. The engine parked in the shed is a modified photograph of the real model which runs on the upper level, it is actually only a few millimeters deep! Some stones are real, others are made of pure... plastic!



The main thing is to ensure that they look like real stone, providing a perfect illusion!

pretty much the same: goods are loaded in one location, and unloaded in another, but this action must be pepped up to look lifelike. Once the theme is chosen, I start sketching the layout: how to locate the various scenes in relation to each other, how to lay the track. Then I build a quick model in 1/10 scale, this is an important step which allows me to confirm the validity of the volumes and also to define the outside limits of the layout.

After that, it's traditional modelling work: building the benchwork, which I always design to be lightweight as my layouts have to be portable. Laying the track, in this case on an 8mm thick sheet of MDF. The ground volumes are shaped out of Styrofoam, clad with plaster strips. Vegetation grows right at the end, once the buildings are in place and weathered. I often use natural moss which grows at the back of my garden in a damp shady spot, it's fine-textured and its structure is evocative of undergrowth.

FF: If I'm not mistaken, this moss is put in place at the last moment and sometimes produces surprises?

BJ: Well, yes, this shouldn't really be mentioned... Once, I arrived on a show with a truly living layout! I had collected the moss complete with its creepy-crawlies, and all my shrubs were inhabited (smiles)!

FF: Aside from railway modelling, do you have artistic hobbies?

BJ: I paint, sculpt and take photographs. In my view, railway modelling is a form ...



The wall is built out of Styrofoam stones and miniature bricks, assembled with plaster. The wall is coated with polystyrene primer from the Boesner range. Everything is then oil-painted and weathered!



The attitudes of the figures are carefully modelled. Photos were used to create these Fimo-type baked plasticine figures, built around a brass wire skeleton.



1/22,5 Layout

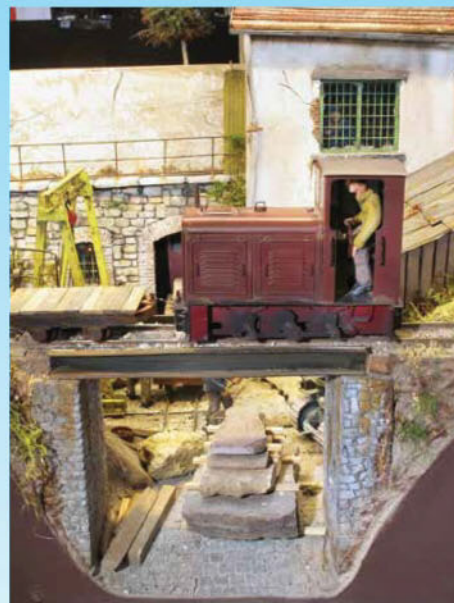
... of art, it combines artistic practice with technical activities.

FF: Such artistic practice is very obvious when observing your layouts.

BJ: I sculpt and model my layouts before painting them. I use all the materials that are handy, and I enjoy discovering new ones or testing new techniques. My layouts are a blend of many things: sculpting, modelling,

oil-painting, brass etching, some 3D printing, re-worked photography...

I see my layouts as theater scenery, as a whole which must be consistent overall. As is the case in the theatre, the scenery is there to serve the actors, you have to catch the public's attention so that they see what you have chosen to show them, and let themselves be carried away by the story! ■



Nothing sophisticated when it comes to the bridge: the 8mm thick MDF trackbed is coated with plastic strips, and the abutments are engraved in Styrofoam. The bridge is then oil-painted. Here again, what is crucial is the overall impression.

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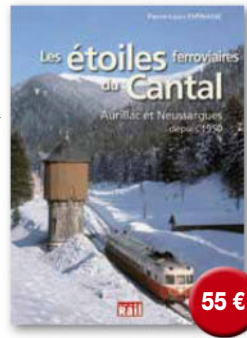
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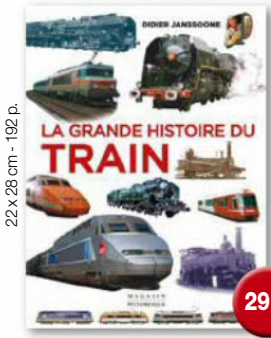
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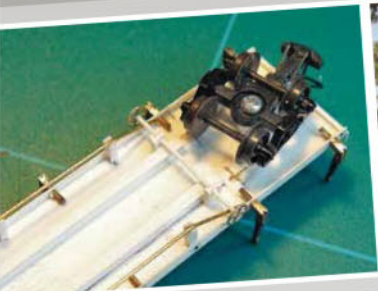


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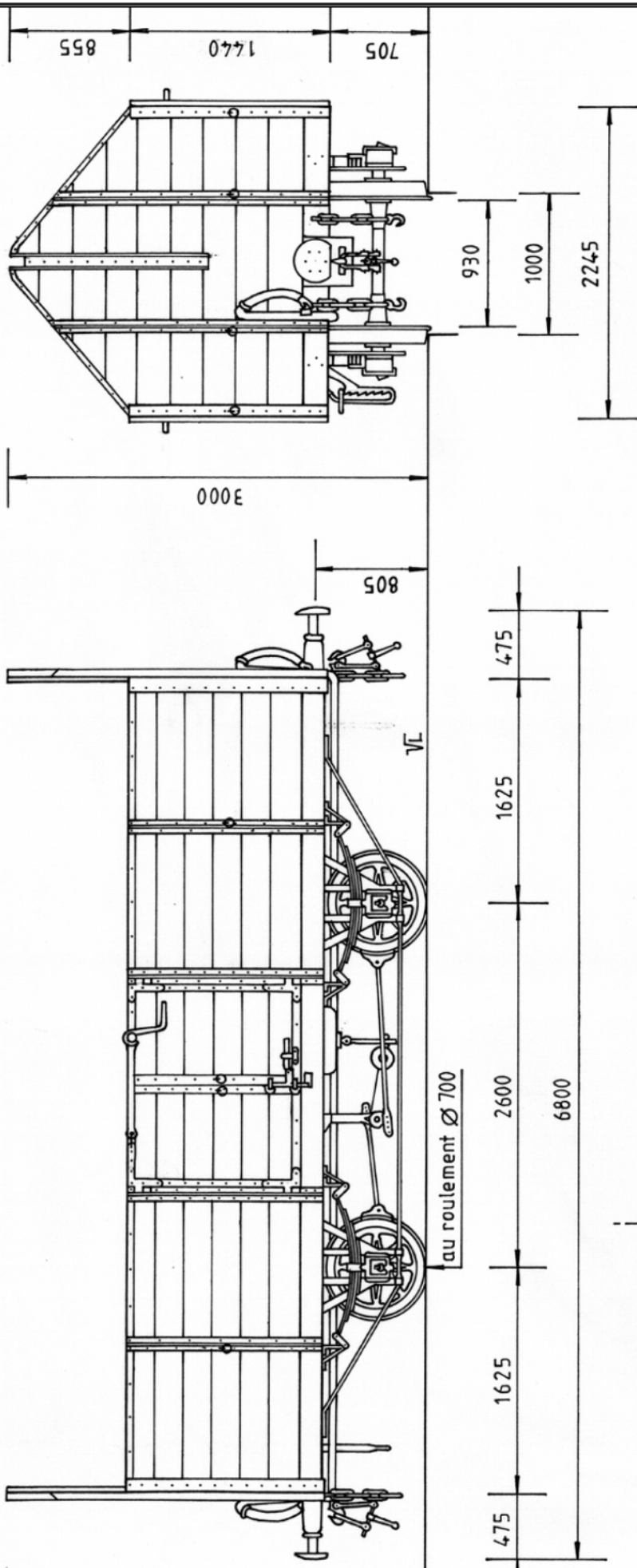
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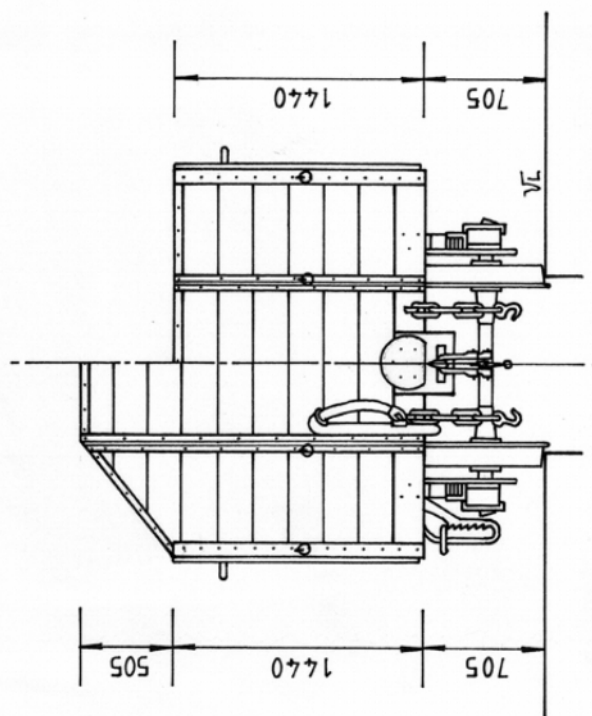
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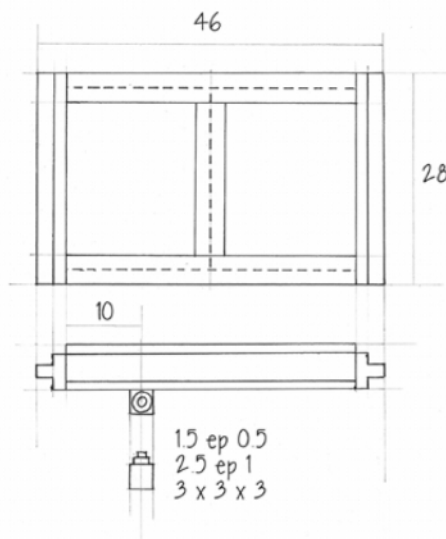
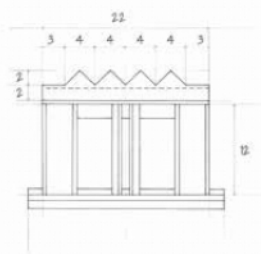
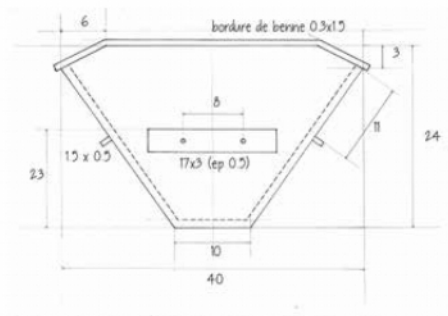


OPEN WAGON **TK 301 to 333 series** Drawing Vincent Lepais, scale 1/43.5



Templates of the tipper parts

Drawing Pierre-Frank Séguineau from Pierre Fichet, scale 1
(see construction article p. 39-42)

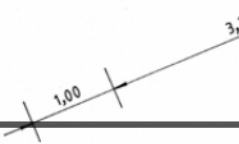
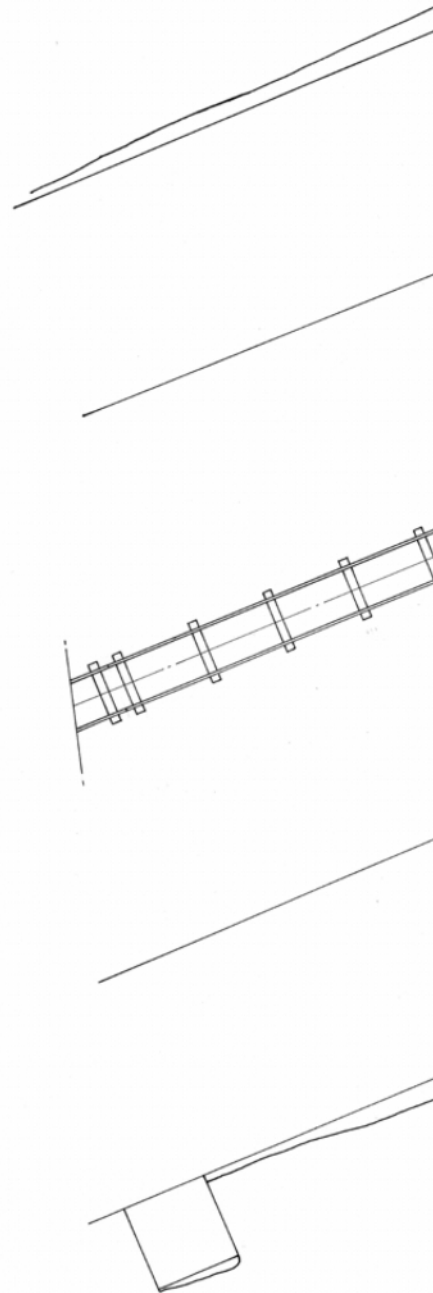


Bois Gachet lime kiln

Drawing Vincent Lepais, scale 1/87

VIEW FROM ABOVE

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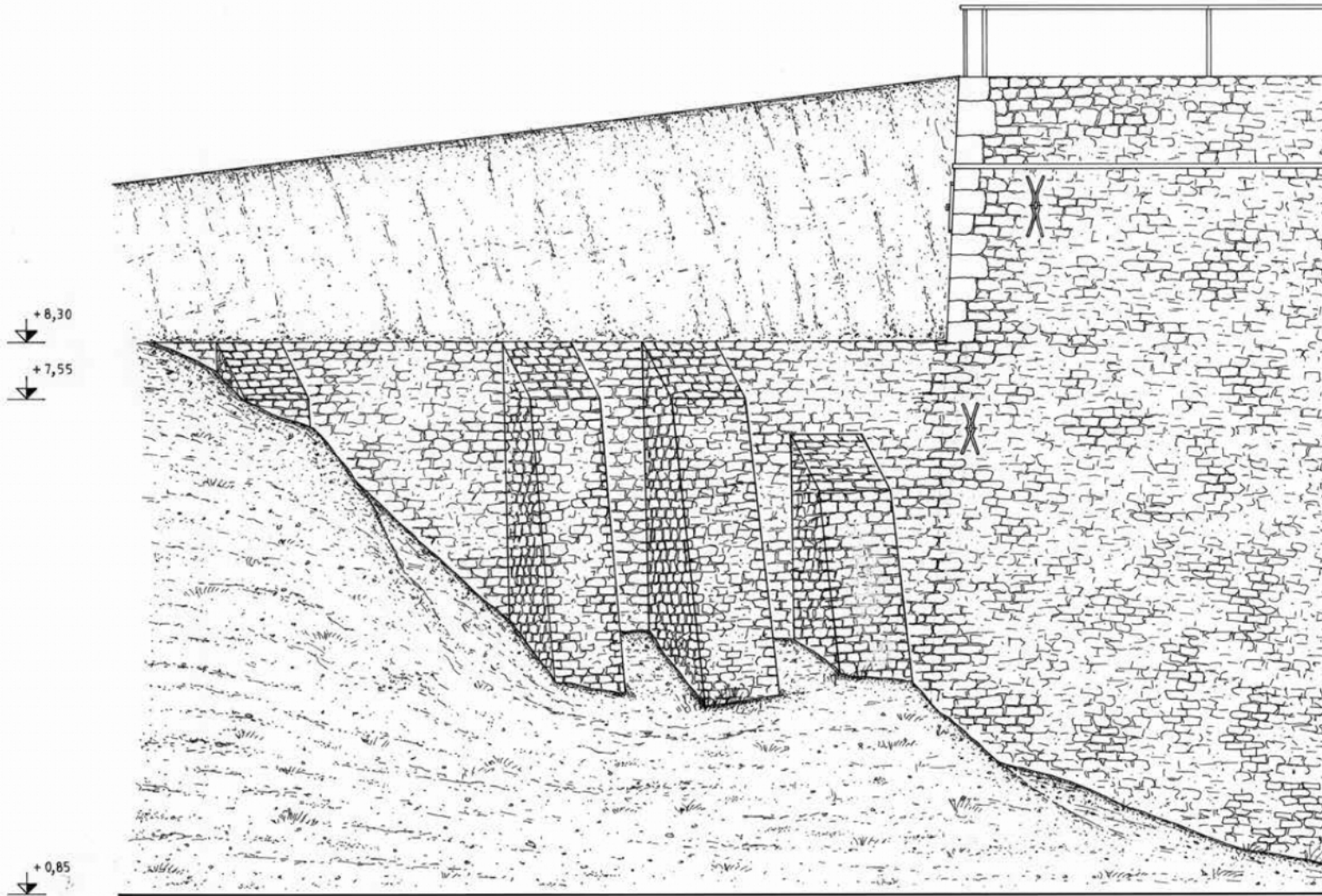


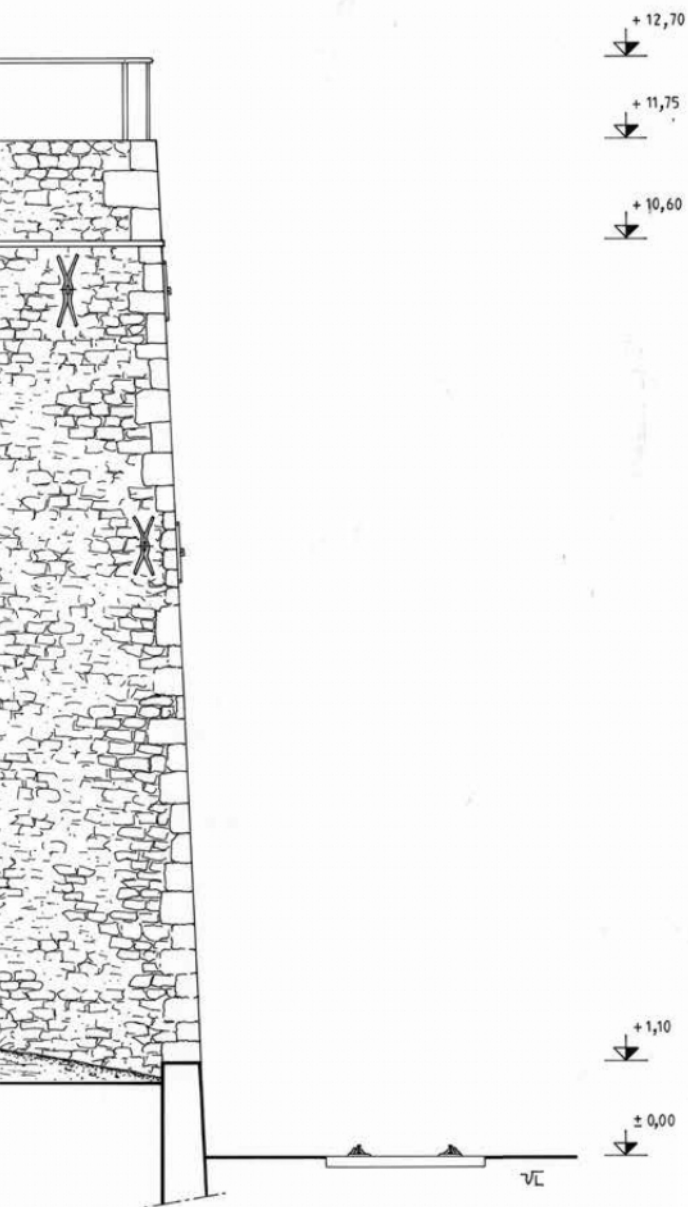


Bois Gachet lime kiln

Drawing Vincent Lepais, scale 1/87

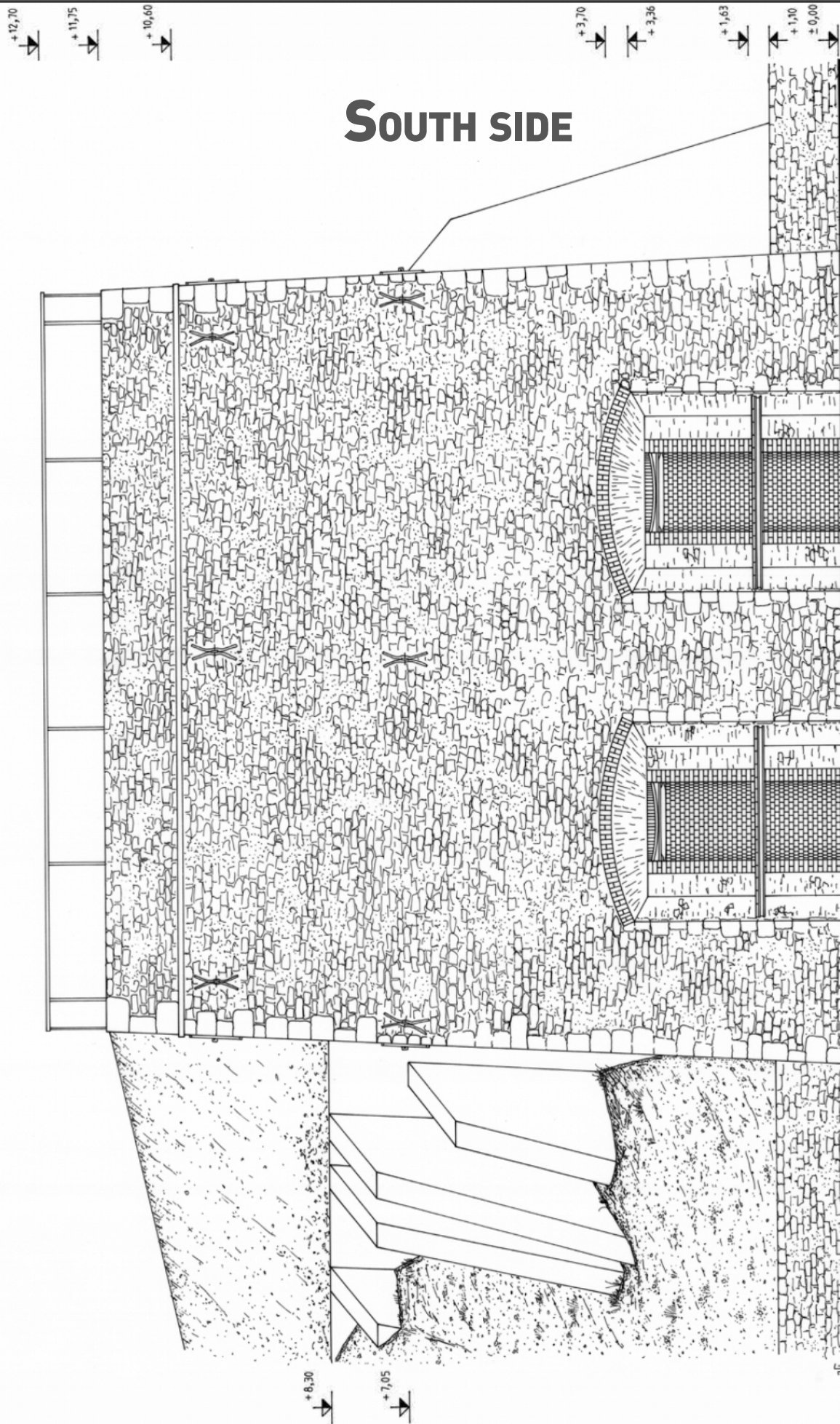
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