

DOSSIER: GRASS AND BUSHES, BETTER THAN THE REAL THING

Voie Libre

Voie Libre

#99

THE MAGAZINE OF RAILWAY CREATORS

HISTORY

60cm GAUGE IN
THE FRENCH SUDAN

MOTIVE POWER

DISCOVERY

A HITACHI BOBO IN HO-9

CONSTRUCTION

- A STEAM-POWERED
RAILCAR IN HO-9
- A STEEPLE-CAB ENGINE
IN O SCALE

DEMICARRÉ

LARGE SCALE, SMALL SURFACE

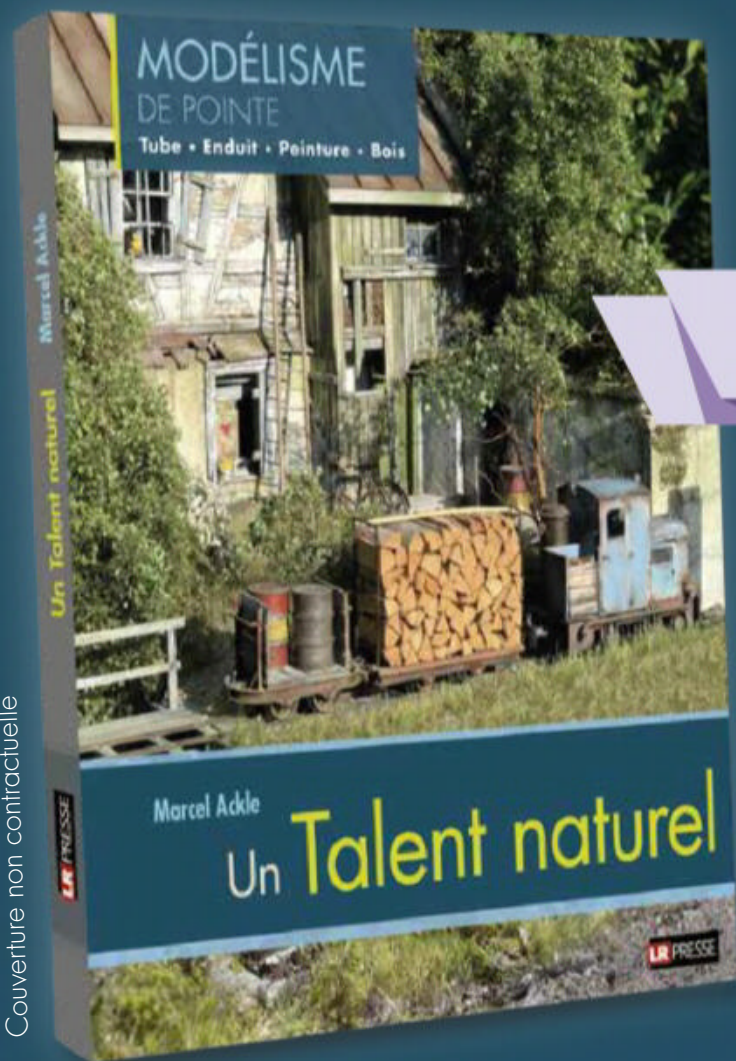
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October, November, December 2019

Editorial #99

MODERNITY OR TRADITION?

Our heart sways between both: Should we support traditions, bolster what we are familiar with, observe our achievements and work from familiar bases? A way of reassuring ourselves because we can produce what meets our expectations? Or should we, on the contrary, take bolder steps, dabble with new combinations, new tools, new ways of doing things? Running the risk of producing something

sub-standard, less accomplished, but also opening up new prospects and enabling us to imagine even more impressive future creations?

Within the *Voie Libre* editorial team, we support both options! So that we can move forward, renew ourselves, create new things on a solid basis, because tradition and modernity, far from being contradictory, are actually complementary!

Enjoy the autumn! *François Fontana*

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

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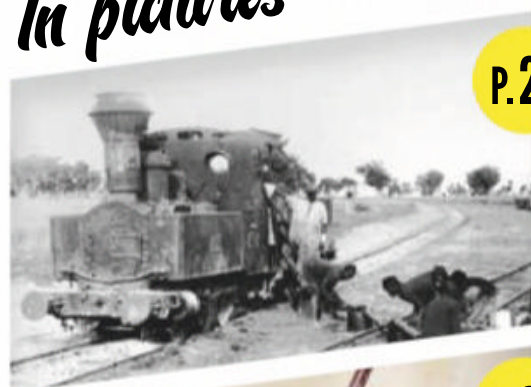
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Central folder

BAIGNEUX-LES-JUIFS STATION

In pictures

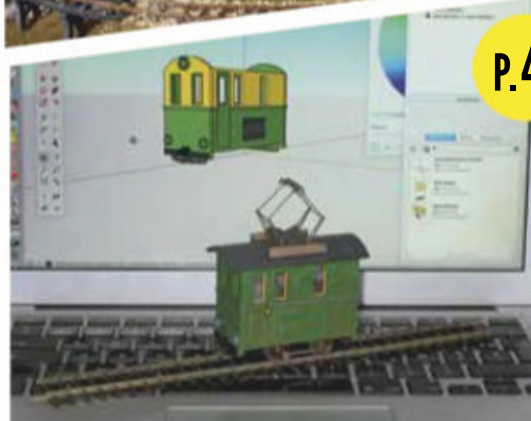
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TILLIG : SPREEWALDBAHN 0-6-0 T



Seven engines of this type were built between 1897 and 1903 by Hohenzollern in Düsseldorf for the Spreewald metre gauge network (in the region of Cottbus), known at the time as the LCK. They ran until 1968/1971, numbered DR 99 5701 to 5707. Each engine weighed 21 tons, developed a power of 107 kW/145hp, and could reach a speed of 35 km/h. With their large air tank located on the right-hand side of the running plate, and their air compressor curiously fitted to the left-hand side of the front of the smokebox, these engines have a very peculiar appearance. In the years 1952/1953, they were fitted with Knorr air brakes to replace the customary Heberlein cable braking system which, unlike what was found on Saxon networks, ran here under the chassis instead of along the roof. The engine reviewed here was numbered 99 5701, in its 1952 condition until it was withdrawn in 1970 (scrapped in 1974). The only survivor of this class is N° 99 5703, stored out of order in Lübbenau. Tillig has re-issued this model, released in an earlier version a long time ago and very typical of the Zeuke

productions from beyond the Iron Curtain. The chassis is completely new and is derived from a TT scale model. Without being as accurate as that of the Harz 0-6-0 T engines, the engraving is fair and the add-on details accurate. As per the prototype, the driving rod is coupled to the third axle and the double eccentric Allen valve gear is neatly reproduced. Once the model is out of its box, you will have to fit the air compressor, the brake hoses and possibly the reproductions of the prototype buffers with their hooks and turnbuckle, instead of the loop couplers. Also add a driver (from the ROCO in my case) and you will have a fine smooth-running little engine, perhaps a tad fast under 12 V in analogue. It is fitted with a NEM 662/NEXT 18 standard socket and features working and reversible LED lights. Access to the decoder socket requires prizing open the lower part of the cab, starting behind the coal bunkers. All three axles collect the current.

Jacques Royan

TILLIG / SPREEWALDBAHN 0-6-0 T / H0-12 REF. 2912 / PERIOD III / PRICE OBSERVED FROM 190 TO 215 €

ON30**BACHMANN-USA : A US ARMY BALDWIN 2-6-2 T**

Breaking with its tradition of producing models having mainly run on the American continent, Bachmann has released the 2-6-2 T engines built by Baldwin for the Pershing expeditionary corps, most of which were shipped to France. The models, displayed this summer, seem to be faithful to the prototype. The driving mechanism, with its simplified motion, did however raise a few eyebrows. We contacted Bachmann about this. We were informed that the driving mechanism of an H0 0-6-0 T had been used, with the big head of the driving rod transferred to the third axle. The model is available in DCC sound version only and calls upon the HiFi technologies developed by Train Control System. Besides the sounds of the engine itself, we were promised a depot atmosphere and even sounds from the battlefield! The locomotive is announced before Christmas, priced at \$ 449.

Éric Fresné**00-9****PECO : AN AVALANCHE OF LOCOMOTIVES**

This announcement came as a big surprise to many, especially as it took place almost simultaneously in the UK and in Japan! PECO is teaming up with Kato to produce steam locomotives in 00-9. With its range of injected plastic carriages and wagons, PECO is already a leading actor of ready-to-run 00-9 products. An engine can only strengthen its position. To complement its Ffestiniog Railway carriage and wagon range, it was quite logical that PECO should opt for the locomotives of this mythical railway. The first quarter of 2021 will therefore witness the release of « Prince » and « Princess », the signature 0-4-0T+T built by George England & Co around 1865. A Fairlie should follow in those models' footsteps. The partnership with Kato is a pragmatic



choice: the Japanese manufacturer will contribute its expertise in the field of 9mm gauge driving mechanisms.

Éric Fresné

BACHMANN-NARROW GAUGE :

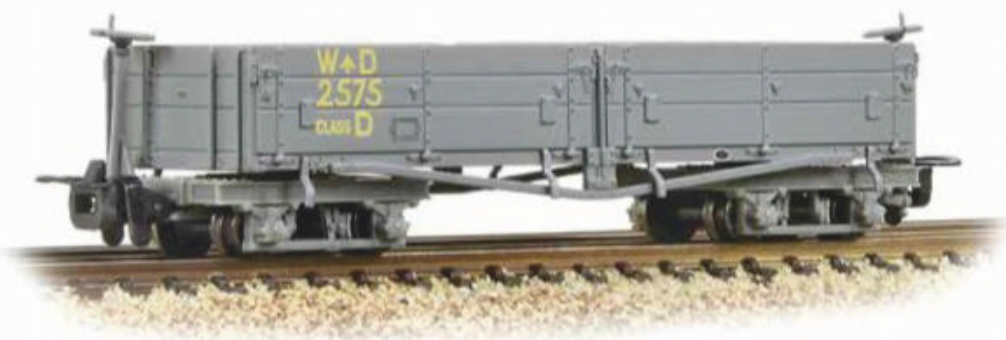
00-9/
H0-9



The new version of the Clayton box van in Lincolnshire Coast Light Railway livery (ref. 393-027)

AN IMAGINARY LIVERY

For decades, British railways ran private owner wagons displaying company names. Bachmann has released a box van (ref. 393-029) with a fine blue livery and white shaded lettering, supposed to carry eggs for the Express Dairy Company. A livery that is quite imaginary but brings an attractive touch of colour to the layout.



The military open wagon with simplified markings (ref. 393-050A). Note the grey-blue colour of the wagon, similar to the French artillery grey prototype shade.



A PLETHORA OF NEW RELEASES

Photos: Studio Bachmann

This is no exaggeration, as since June, the British manufacturer has released no less than 14 references of wagons, while at least 6 locomotives are expected shortly. The wagons are mainly re-decorations of the Clayton open wagon and box van, in military, civilian, authentic or imaginary liveries. I decided to buy two military wagons (ref. 393-025A and 393-050A). Running qualities are as good as ever and the decoration is impeccable. The box van sells at £ 38.95 £ and the open wagon at £ 27.95, a bit more for the weathered references. And while waiting for the Quarry Hunslet engines, you can already treat yourself to the small slate wagons, sold in sets of three for £ 46.95. Bachmann has also announced new versions of its very fine 4-6-0 T. They should normally be available from October.

Éric Fresné



The << Welsh Highland >> version of the 4-6-0 T is stunning, in maroon livery with yellow lining (ref. 391-031DS).

The Baldwin 4-6-0 T is back in a military version with new numbering (ref 391-025A).



The slate wagons are supplied in sets of three and loaded; they are available in red (ref. 393-076) or in grey (ref. 393-075).



AND WHAT ABOUT BREXIT?

Once the United Kingdom will have effectively left the European Union, there will be inevitable consequences on our cross-Channel way of buying. According to the French Ministry of Finance, ordering via internet will remain possible, but European law applicable to consumer protection (withdrawal, refunding...) shall no longer apply to such purchases. British law shall prevail. In a similar way, the fact that the UK will have left the customs union means that customs duties shall reappear, in the order of 20% on all purchases exceeding 150 euros.

SUPPLIES

ABE : NEW AEROSOL PRIMER

The fine range of ABE primers supplied in aerosol cans is expanding, this time with a superb rust shade! Ideal for modellers who wish to evoke well-worn stock and peeling paint with bare rusty metal showing through. Like other products in the range, the ABE aerosols contain 150ml of chrome-phosphate paint that, while holding perfectly on plastics, is ideal for metal.

François Fontana

ABE
AEROSOL PRIMER
AVAILABLE FROM
trains.lrpresse.com
ABE735 (RUST)
PRICE: 12.90€



Book

THE POUHEY 1933 DIRECTORY

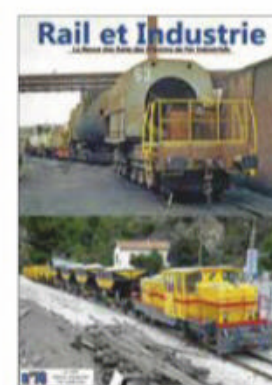
In the days when goods used to be carried at prices that varied according to their value, the Pouey company had specialized in producing personalized tariff directories for its customers. Each volume was accompanied by a general directory of French railway stations, generously illustrated with maps. It is those maps, in their 1933 version, which appear in Clive Lamming's latest opus. Each map covers every single line, from the trunk routes of the main railway companies to the most obscure local light railway. The maps alone are a treasure trove of information for railway enthusiasts. Each one comes with a short text explaining in general terms the railway features of each department in continental France. A book to be consulted like an atlas.

Éric Fresné

MAPS OF ALL THE LINES AND STATIONS OF FRANCE
188 PAGES, SOFTBOUND
89 MAPS IN COLOUR
TEXT BY CLIVE LAMMING
ÉDITIONS LR PRESSE, PRICE 29.90€ (CODE: POUHEY)



PRESS REVIEW



GATHERINGS

In modelling language, autumn rhymes with exhibitions. A number are scheduled before the end-of-year festive season.



EXPONG 20 OCTOBER 2019

Let's start with ExpoNG on 26th October in Swanley near London. This one-day show dedicated to narrow gauge is a great tradition. 15 layouts and some 50 traders' or societies' stalls.

Issue N°119 of the **Narrow Gauge and Industrial Railway Modelling Review** provides the opportunity for faithful readers of *Voie Libre* to re-discover a layout we had reviewed in our own Issue N° 70. Ten years later, the charm of Peter Kazer's rendition of the Ravenglass & Eksdale Railway has not waned. And for those keen on simple working methods, take a look at the rail bender described on page 310... **Rail et Industrie** dedicates its main dossier to the very heavy duty standard gauge track of the Marcinelle blast furnace. Narrow gauge fans will probably prefer José Banaudo's article about the Romanian BoBo engines used on the Chemins de fer de Provence (CP). In Issue 395 of **Chemins de Fer Régionaux et Tramways**, José Banaudo (again!) provides a very comprehensive study of the introduction of Renault railcars on the Nice-Meyrargues line of the CP. Enjoy your reading.
The Editorial Team

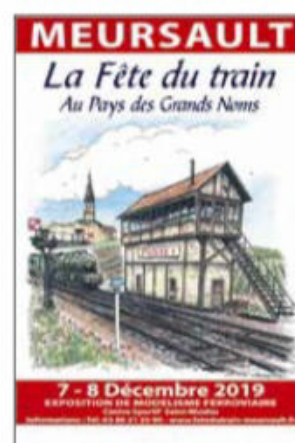


SAVOIE MODÉLISME, CHAMBÉRY 2 AND 3 NOVEMBER 2019

This will be followed by Savoie Modélisme in Chambéry on 2nd and 3rd November, several "Croisées de l'Étroit" in H0-9 will be gathered there. An ideal moment to meet the participants in this joint project and possibly enquire about your own future participation. Bernard Diot's railway dioramas in H0-9 will also be on display, as well as a selection of narrow gauge layouts.

RAILEXPO, CHARTRES 22, 23 AND 24 NOVEMBER 2019

We shall attend Railexpo on 22nd, 23rd and 24th November. A few fine metre and narrow gauge layouts will be present.



MEURSAULT 7 AND 8 DECEMBER 2019

Finally, in Meursault, we will have the pleasure of displaying Porto Flavia, together with seven other metre or narrow gauge layouts in H0 and 0 scale.

Book

FERROVIE PORTATILI DELLA PRIMA GUERRA MONDIALE [PORTABLE RAILWAYS OF WWI]

This fine small format book, hardbound under a blue cover and illustrated with diagrams, has been self-published by the Italian author Mauro Bottegal. If you are convinced, like many, that narrow gauge was massively employed in France during WWI, Mauro Bottegal will prove you wrong; and this is some discovery! His book reviews, over 216 pages, all the railway installations built by both belligerent alliances all along their front lines. However, he does not include the front lines in French territory, as this was an impossible task for him. He describes all the portable systems used, generously illustrated by track-laying and turnout diagrams. He then reviews all the rolling stock employed, country by country. The opportunity to discover some gems! There are a few monochrome illustrations, but printed too small for my taste, as well as a great many drawings. A fine piece of work, which complements others published on this subject.

François Fontana

FERROVIE PARTATILI DELLA PRIMA GUERRA MONDIALE MAURO BOTTEGAL

PRICE: 28€

www.lulu.com



Book

A SELECTION OF BUILDINGS FROM FRENCH NARROW GAUGE RAILWAYS

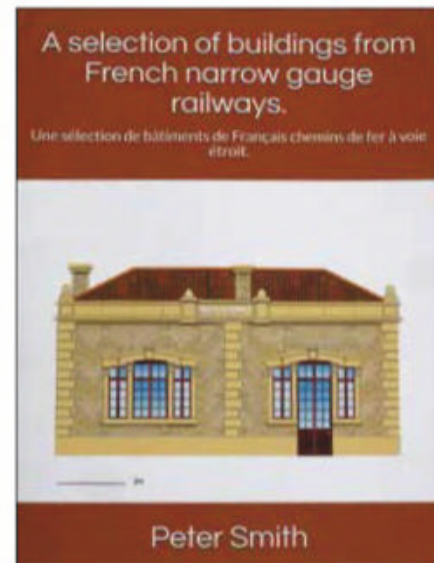
In his customary and favourite A4 format, Peter Smith has produced a book describing 26 railway buildings. He based his research on a few drawings, some photographs – often period postcards –, as well as some on-site measurements. The text is printed in two languages, French and English. In addition to elevations of the building facades, the book also contains a few photographs. A good source of inspiration when planning to make buildings for a model layout.

François Fontana

A SELECTION OF BUILDINGS FROM FRENCH NARROW GAUGE RAILWAYS PETER SMITH

Available from Amazon

PRICE: 19,95€





A Taiwanese model.

ANE Model

BOBO DIESEL LOCOMOTIVE OF THE A-LI FOREST RAILWAY

This is the first model produced by the young ANE Model company, and it's an H0 scale engine for 9mm gauge. For us, mainly, it's the first model produced in Taiwan.

Text and illustrations: François Fontana

H0-9

THE MODEL AT A GLANCE

Scale: 1/87

Gauge: 9mm

Manufacturer: ANE Model

Model: Hitachi BoBo engine of
the A-li Mountain Forest Railway

Period: 1980s to nowadays

The model is supplied in an attractive rectangular beige-coloured cardboard box, with the locomotive profiled in brown shades, some Chinese characters and their English translation: “28 ton narrow gauge A-li mountain forest railway diesel locomotive”. The manufacturer’s name, ANE Model, is displayed on one side of the box. Once the lid is opened, a splendid BoBo diesel hydraulic locomotive with side-rods appears, cradled in white foam. It accurately reproduces the

Hitachi locomotives that were built in the 1980s for the A-li Mountain Forest Railway in Taiwan.

A FEW WORDS OF HISTORY

The Alishan (A-li) Forest Railway is an 86km long, 76cm gauge railway that links the coastal city of Chiayi and the mountain town of Zhaoping, at an altitude of 2274m. Built in 1912 by the Japanese administration, it was designed as a forestry railway. But as early as 1918, it was opened to pas-

Spotlight



A locomotive which meets the most demanding contemporary standards.

WHERE TO FIND IT?

As ANE Model productions are not commercialized in Europe, LR Modélisme has decided to make this engine available via its online shop. We'll keep you informed of progress in this area.

Inside the body, the cast metal chassis, the engine block and the electronic board.

senger traffic. In 1982, most of the traffic was transferred onto the road, but the line was preserved and became a tourist railway.

It was at that time that the Hitachi BoBo engines were introduced to replace the 28-ton two-truck Shay steam locomotives.

A few of these are still very occasionally used.

THE LOCOMOTIVE

This model meets the most exacting contemporary standards: fine engraving and details, flush glazing, soft plastic add-on

parts with no traces of flash or adhesive, blackened wheels and side rods, etc. The red livery with white visibility stripes is perfect; as for the markings, they are legible in 1/87 scale! Lighting is directional. The motor is located centrally and fitted inside a cast metal chassis.

It drives both bogies via cardan shafts and a worm gear/straight gear combination. All the wheels are driven by gears, the side rods are purely cosmetic. Two flywheels complete the driving mechanism. The body isn't easy to separate from the chassis, two small Philips' screws must be removed from under the bogie on the long bonnet side. Then, gently prize the body off the chassis. The electronic board is located above the motor, and it doesn't feature a standard socket for a decoder.

ON THE TRACK

The engine was tested on an oval of track with a minimum radius of 22.5cm which it handled readily, even though the instructions recommend a minimum radius of 28cm. On a 10% gradient, it hauls 36 axles without any sign of slippage. After a half-hour of running-in at reduced speed, start-up becomes very smooth and the minimum stabilized speed is the proper one for shunting. The loop couplers, despite being very close to the body, operate perfectly. —

Ideal for a heavy train!



Demicarré

Claude Rémond, trains are his alibi!

At the RailExpo 2018 show, we discovered Demicarré ("Halfsquare"), Claude Rémond's new industrial layout in 1/22.5 scale. And we were keen to find out more about it... Read on!

Text and illustrations: François Fontana

Claude is a familiar figure in the world of narrow gauge industrial layouts. For several years, he has been spoiling us with animated scenes, highly narrative, largely inspired by suburban atmospheres from the 1950s and 60s. Although he began in 0 scale narrow gauge, he quickly moved ■■■



*The company gates are open. let's take advantage of the lorry
drivers predicament to slip into the factory yard.*

Claude displayed Demicarré for the first time at RailExpo 2018.



... on to larger scales. Nowadays, he models in 1/22.5 scale on 32m gauge track, corresponding to prototype 60cm gauge. His approach has evolved over time, moving from "pure" railway modelling to a freer type of expression. One in which the trains are actually an alibi! An alibi that we at Voie Libre find nevertheless very pleasing.

We met Claude when Demicarré made its debut at Railexpo 2018.

François Fontana: *Hallo Claude, so you are back with a new layout, again of the industrial type, again set in the 1950s – 1960s. Tell us about how Demicarré came to be.*

Claude Rémond: I'm rather short of space when it comes to railway modelling, so I build in large scales! This may seem like a bit of a paradox, but that's how I can best evoke the images I have in my mind and that I want to turn into reality. My aim was to conjure up an atmosphere, to make it all highly identifiable at a glance. I needed tiles



The relaxed attitude of the employees is an incentive to carry on exploring, especially as the distinctive sound of the diesel engine is most attractive.

The layout at a glance

Scale: 1/22.5

Gauge: 32mm

Dimensions: 120 x 60cm

Inspiration: factory yards
in the 1950s – 60s

Supply: on-board batteries

Control: independent
on each locomotive

and red brick, paving stones and slabs of grey concrete, balanced by the greenery of vegetation. When you decide to model a small surface, the images created must produce an immediate effect. I imagined this small factory yard, these various cameo scenes, with a train that brings life to the overall picture and holds it together.

FF: Well, precisely, talking of overall pictures, how did you proceed?

CR: I work on one small area at a time. The layout, as shown to visitors, actually consists of a series of small dioramas. Right from the start, I decide on the general arrangement; I create the overall composition, but at this stage, it is no more than an outline. A warehouse with a brick frontage here, a building with a shed roof there, elsewhere, a scene with figures.

Then, I start cutting out the woodwork and begin working on some scenic items.

FF: At this stage, you still don't know what the layout will look like?

CR: Yes... and no! Actually, I do already know that trains will go here or there, but their precise route remains vague. I do have to stick with a given curve radius and keep in mind loading gauge clearances; so I do need to have a general idea of the trackplan and to abide by some basic measurements.

But in the present case, the trackplan only took its final shape a good year after I had started working on the layout.

FF: This is no mean task with such a large scale...

CR: Let's say that with some practice, the same thing applies in IIm scale as in O scale or H0 scale: you end up by having the scale "in your eye" and you know your clearances. In practice, I built a diesel engine, a length of 26cm radius curved track ■■■



The yard is filled with an incredible amount of junk. As for the workers, it's hard to say whether they are actually working or simply passing by on a maintenance or delivery job.



60cm

Layout
plan

120cm

Construction

Photos: Claude Remond



First rough mock-up. The few elements already built are installed on a workbench, the trackplan is still embryonic.



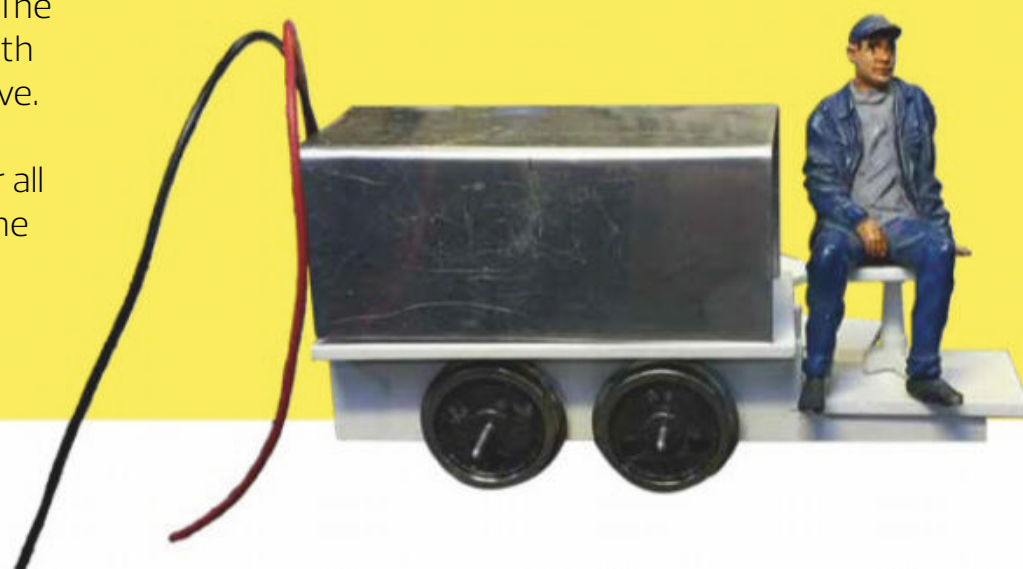
As the buildings take shape, the dimensions are frozen. The layout baseboard is built, the factory yard will be one half square metre, giving the layout its name. In the foreground, note the handle for operating the turntable.



The trackplan is taking shape, a second turntable will give access to the fueling point for the diesel locomotive. The main track will connect both workshops via a large curve. Three turnouts serve the turntable, which allows for all the required shunting of the trucks.



The trackplan is now final. The ground is covered with paving stone or concrete slab plaster castings.



Icing on the cake: a few days before the show, a second locomotive appears on the layout. Plastic sheet shell, metal body to give it more weight, it has been fitted with its batteries and its infra-red receiver, disguised as a headlamp!

■■■ and a turnout. This set my mind to rest when tackling the construction of the scenery. All my doors must be mobile, all the lights must be functional. I also want the perspectives to be cramped, meaning that viewers must become totally immersed in my small world. To achieve this, every scenic item must play its part in the overall scene. No single element must become dominant.

FF: And when it comes to motive power, you use batteries and wireless controllers?

CR: Yes, I had already tested this approach on my previous layout; this time, the system is far more elaborate. The diesel locomotives are autonomous and a small infra-red Lego controller allows me to operate them with the greatest accuracy. Of course, this is easier in a large scale, and means that electrical pick-up problems become a thing of the past. No more micro-breaks in current supply, no more grime ■■■



The turntable is the focal point for shunting in the factory.



Two locomotives are shunting around the yard. More specifically, the second one, painted yellow, is a battery-operated machine that is allowed inside the buildings. The workmen are as busy as ever, but what they actually do still remains a mystery!

1/22,5 Layout

■■■ build-up, no more point blades jamming or embarrassing failures in public.

FF: Let's talk scenery – this is your main area of interest – how do you build these layouts of yours?

CR: All my buildings are designed in the same way: a thick cardboard shell covered with fine plaster castings to reproduce various types of brick or stonework. We are in the 1950s – 60s, brick is very common, plastered brick, rough stone, terra cotta tiles... The ground is covered in paving stones and concrete slabs. All these components are made separately; I make a mould and cast as many parts as needed. The wooden inserts are made of... wood, the metal ones of... plastic sheet! Then, everything is decorated with acrylic paints from tubes.

FF: And how do you operate the trains?



The Fenwick fork-lift has vanished into a building, most probably a warehouse. But the guard, sitting behind his glass window, discourages us from taking a closer look. No chance of figuring out what exactly has been manufactured here since 1920.

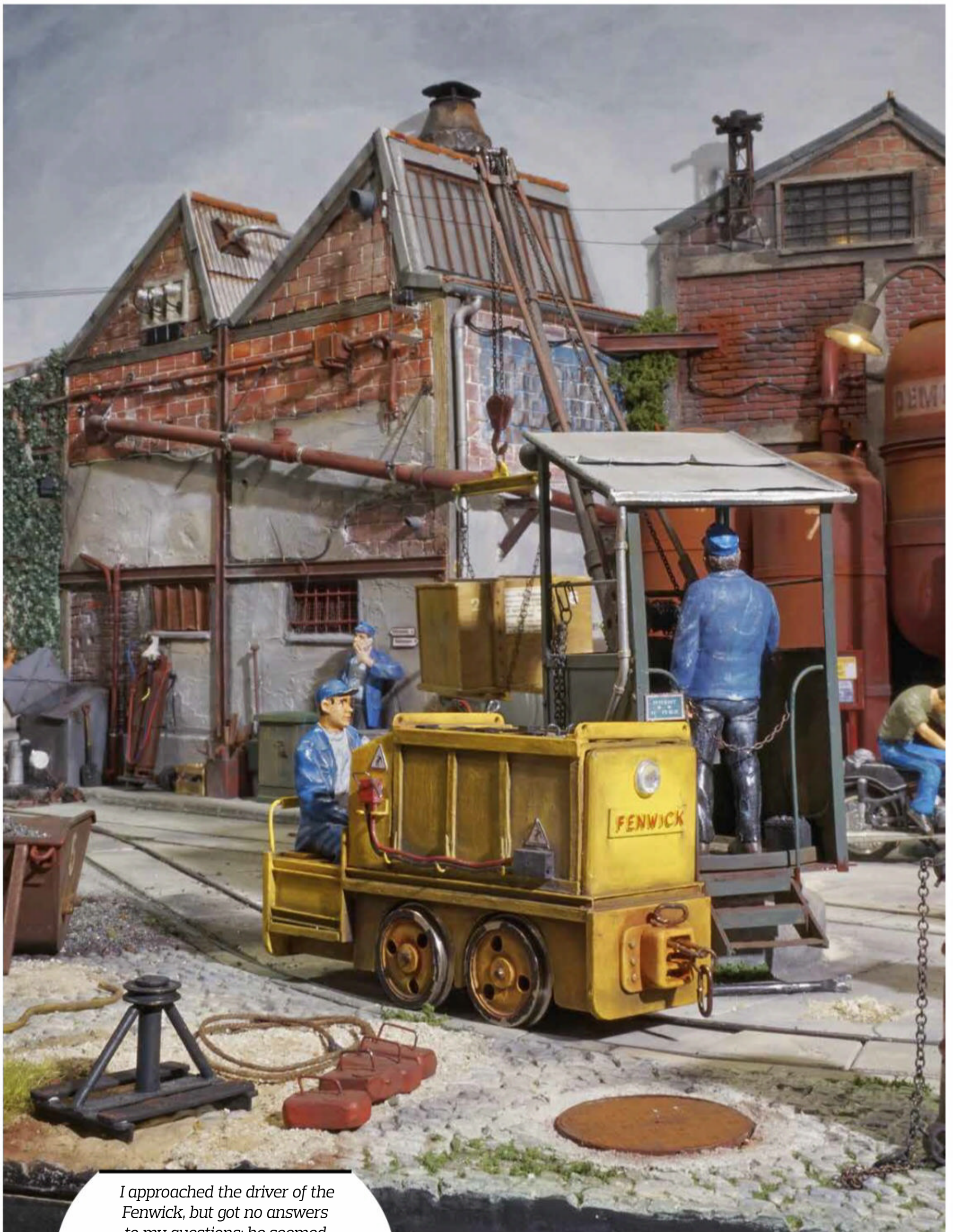
CR: This is real high tech, as there is no electricity in the rails, there is none below the baseboard (laughs). On the other hand, there are quite a few angle cranks fitted to the rods used for operating the turnouts, as well as gears and worm gears to work the turntables. Keep it simple, simple and once again, simple!

FF: So, in your eyes, is railway modelling more art than technique?

CR: Yes. Technology is necessary, but it must remain invisible, it's role is to serve creation. I do consider railway modelling as a form of art. What motivates me is creation; and my reward is to share it with visitors. ■



In the yard, << the blue one >>, as it is called, is shunting trucks loaded with tightly shut packing cases.



I approached the driver of the Fenwick, but got no answers to my questions; he seemed totally absorbed by his task!

A Decauville 0-4-2 T in the French Sudan

THE TRAVELS OF "LOUSTALOT-LACLETTE"

From 1880, the European powers began a race to colonize sub-Saharan Africa. And in this race, the speed provided by railways, even light ones, became essential. 60cm gauge lines played a small part in the process.

Text: Éric Fresné



Emile-Louis Abbat, coll. C. Abbat

With its fine nameplate and well-polished brasswork, this engine could be running on a seaside railway. But far from it! This Weidknecht/Decauville 0-4-2 T is seen fighting its way across the Malian savannah on a short-lived 60cm gauge line built in 1891 and lifted just 6 years later.



Map
of the lines

A French train in Africa

Right from the moment the very first sleeper was laid, the Kayes metre gauge line in Niger took up a lot of time in the French National Assembly's agenda. It must be recognized that the project was a financial disaster and that little progress was achieved in terms of work. The European staff had great difficulties surviving the climate. The track and trackbed, tediously built in floodable areas during the dry season, were very seriously damaged with every rainy season. Therefore, when the Bafing river (which becomes the Senegal after having joined the Bakoye) was finally reached in 1888, the question was whether or not it had to be crossed, and how to extend the line beyond.

THE MILITARY STEPS IN

Joseph Galliéni, at the time CIC of the French Sudan, ordered that a mission of the Engineers Corps evaluate the condition of the line and that the latter be placed under military authority. The Engineers didn't show up, but the Naval Artillery, probably the only "technical" corps to be present on site, did take over the line. And before extending the metre ■■■



DR/National Overseas Archives

For its construction and during its early years of operation, the metre gauge line from Kayes to Bafoulabé could only rely on 5 tiny 0-6-0 T locomotives built by the G. Péteau works in Passy.

And it was via the river that the "Loustalot-Laclette" engine reappeared, 20 years after the closure of the Bafoulabé-Dioubéba line. It is seen here about to travel down the Niger river from Koulikoro to Ségou to be returned to service.



DR, coll. F. Fontana

■■■ gauge any further, laid a 50cm gauge railway, supplied by Decauville, along the supply line, upstream from the Bafing. The following flood season soon put an end to the line. Those lengths that could be salvaged were used to circumvent the Bakoye rapids, combined with the use of boats.

MEANWHILE, IN PARIS

Niger (like Tipperary) was still a long way to go, and at that speed, it was likely both the British and

the Belgians would get there before the French. The National Assembly considered whether to continue with the construction work. In 1889, it set up a commission to decide on which gauge to use for extending the railway. Nothing much came out of this, but the Deputy Colonial Secretary of State did have 40km of 60cm gauge track (using 9.5kg/m rails) shipped to Africa. The efforts undertaken at the time by Decauville to promote its patent gauge must have played a part in the decision.

THE ENGINEERS, AT LAST

In late October 1891, a group of some 20 men from the 5th Regiment of Engineers arrived in Bafoulabé. Just over a week later, a quarter of this detachment had already died of yellow fever. The survivors did manage to evaluate the condition of the metre gauge and to define its route beyond the Bafing river. They also inspected the 60cm gauge track and began laying it as far as Dioubéba.

The following year, Joffre, then a commander, returned at the head of a second Engineers mission, with far more men and equipment. The Naval Artillery brought 60cm gauge stock: two 0-4-2 T locomotives and an assortment of wagons. The two engines were named after two captains who had died the previous year: "Seta" (Decauville 153/1892) and "Loustalot-Laclette" (Decauville 154/1892). Over the next four years, while a bridge over the Bafing river was being built, these engines took over as best they could from the metre gauge. Fired with briquettes supplied by the Navy, badly maintained and complex to operate, they had a hard job hauling the one daily train they were in charge of. Quite often, the wagons had to be propelled by men. In 1897, the metre gauge reached Dioubéba, and the 60cm gauge track was dismantled.

20 YEARS LATER

By 1918, the French Sudan, conquered and "pacified", had become an integral part of the French Empire. The country's resources were exploited ■■■

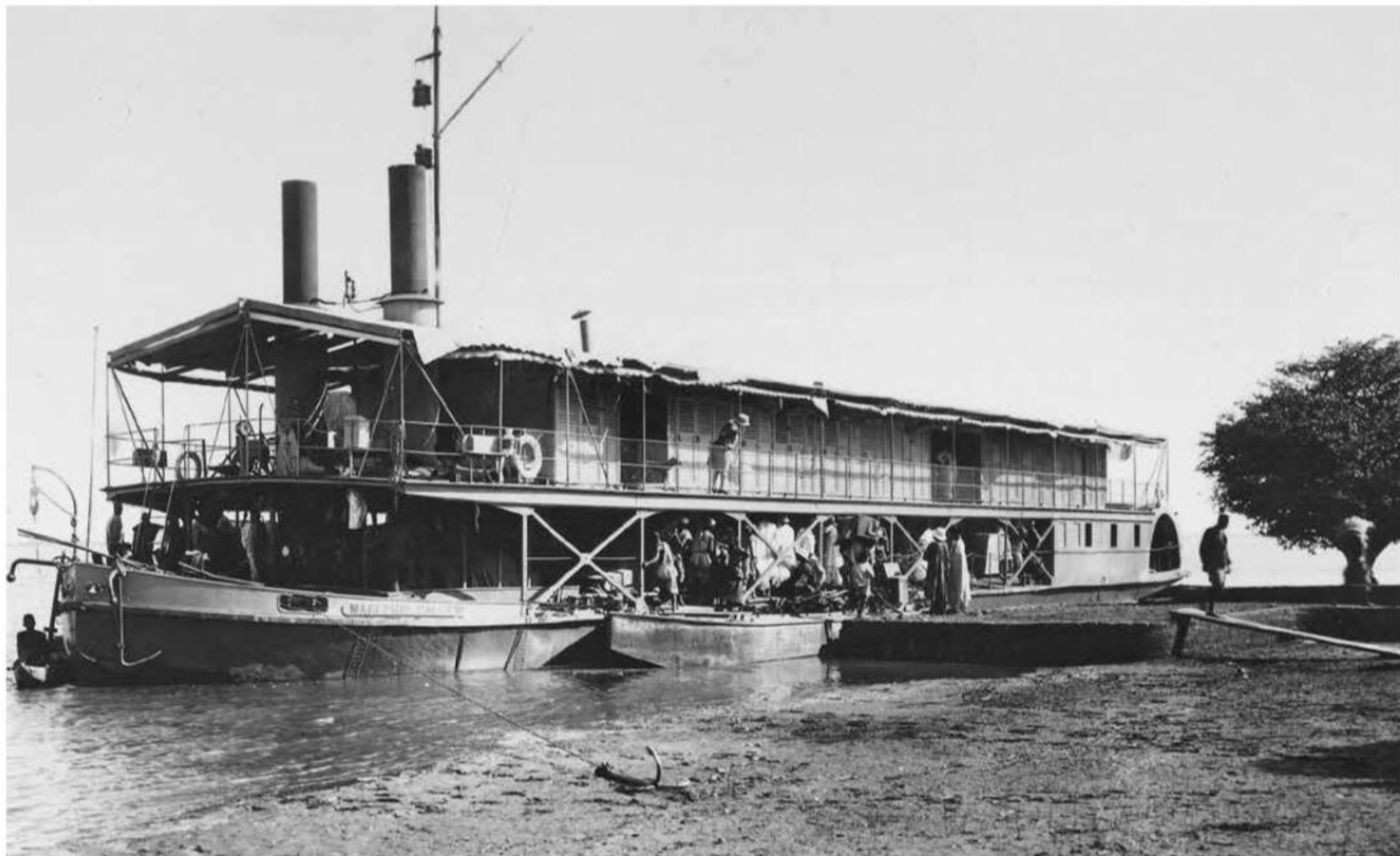


Émile-Louis Abbat, coll. C. Abbat

In 1893, Weidknecht 0-6-0 T engines were supplied to beef up the metre gauge loco fleet, enabling (in principle) one daily train to be run each way...

THE FRENCH SUDAN

Having been present since the XVIIIth century in the "Colony of Senegal", France, prompted by Faidherbe and later by Galliéni, undertook from 1880 the conquest of territories located on both sides of the Senegal and Niger rivers, as well as the connection with the southern Algerian desert. This conquest put an end to a series of kingdoms and empires that had extended all over West Africa since the Middle Ages. Having become a colony under the name of "French Sudan", these territories were administered by France until 1960 before becoming what is today Mali.



STEAM

The metre gauge line from Kayes to the Niger connected the former river with the Senegal river. Colonial France therefore also operated a river fleet which included the "Maréchal Gallieni" paddle steamer.



The 60cm gauge rolling stock is straight from the Decauville catalogue. Besides the G type van visible on photo n° 1, this picture shows M type open wagons and a toast-rack carriage which uses components from the famous KE type.

HISTORY

Unloading the engine required building a ramp and resorting to "forced labour" to get it back onto the rails.



DR, coll. F. Fontana

The wooden stock from the Bafoulabé line cannot have survived the onslaught of termites. The first wagons on the Ségou line were built using local materials, and called on unsprung trucks in lieu of bogies.



DR, coll. F. Fontana

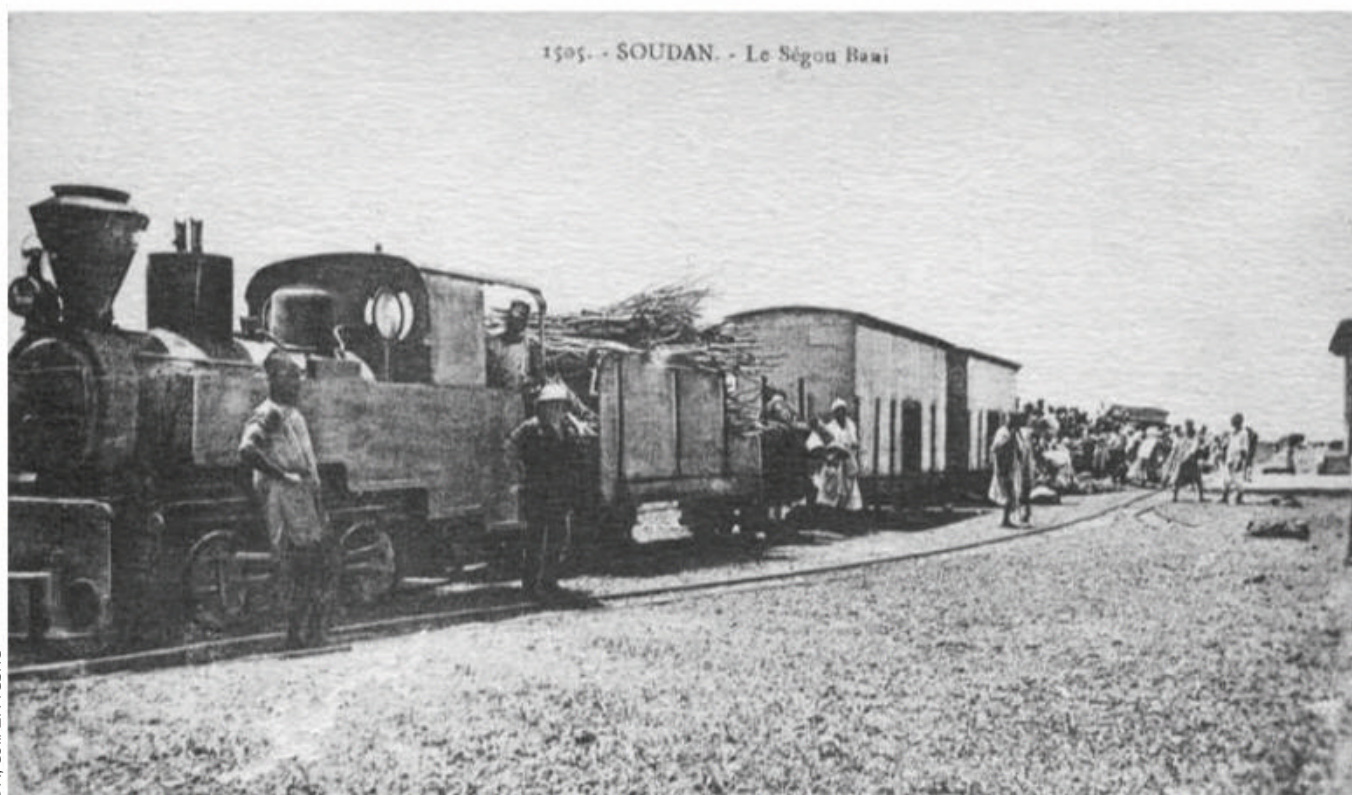
The photographer is perched on a Pershing flat wagon to catch the arrival of the train in Ségou. The station building is completely oversize for a 60cm railway!



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In the 1920s, the Ségou-Bani railway was issued with some stock from France. Essentially wood-fired Decauville 0-6-0 T engines and bogie wagons from the military surpluses.

SAVANNAH

The Ségou-Bani railway was largely straight and flat, running alongside a camel track. The open-sided wagons acting as 4th class carriages are almost certainly from the Moroccan military railways.



Many thanks to Doctor Catherine Abbat who kindly made the photographs taken by her great-grandfather available to us. You can see all the shots he took on the website she has dedicated to them:

<<http://catherine.abbat.free.fr/Fonds>

Abbat
Soudan
Francais/
ACCUEIL.
html>.



and the Ségou region needed to ship its cotton and peanut crops down to the Niger river. The colonial authorities decided to build a 60cm gauge railway alongside a 50km long caravan track. And as no help could be expected from home in the midst of WWI, it was decided to use the stock from the Bafoulabé line, which had been in storage for 21 years. Engine “Loustalot-Laclette” was moved to Ségou on the metre gauge, the by barge from Koulikoro.

The 60cm gauge line from Ségou to the Bani river enjoyed a much longer life than the Bafoulabé line. Traces of it could still be found at least as late as 1962. The « Loustalot-Laclette » 0-4-2 probably didn't survive that long. The Colonial Ministry had at least 4 wood-fired Decauville type 17 engines shipped to the railway. Military wagons, having become massively available with the end of the war, were also shipped to Ségou. The line even saw stock from the Moroccan military railways pressed into service!

SO, WHY NOT BUILD A COLONIAL LAYOUT?

Modelling one of the French Sudan railways is essentially a matter of scenery. Both used to run through wooded savannah areas, with acacia and baobab trees. The savannah was denser and more steeply graded in Bafoulabé when compared to Ségou. The station could be located by the river, providing a connection with the steamer and a few “native” canoes. In 0 scale, most of the 1892 stock is available from the LSL or Duton/RPI ranges. In H0-9/00-9, a MiniTrains Decauville 0-6-0, Meridian Pershing wagons and Decauville 1915 P'tits Kits wagons will be perfectly suited.

Layout Project



60x90cm

SUCCESSFUL vegetation

Modelling vegetation on a layout is a significant part of the project. This aspect deserves a dossier explaining readily accessible methods for creating a realistic environment.

It can be helpful to be aware of a few principles of general ecology before starting on the scenery of a layout. Within a given area of vegetation, one highly visible feature deserves attention. An association of plants comprises four visible strata, of different heights. The **moss strata** consists of moss and grass up to a maximum height of 10cm. Just above, the **herbaceous strata** consists of vegetation up to one metre in height. The next is the **shrub strata**, comprising woody vegetation up to 10 metres high, and finally the **tree strata** with tall trees.

Modelling these various stratas more or less accurately obviously depends on the scale chosen. In H0, the moss and herbaceous stratas are simply evoked by moss and fibres. On the other hand, the structure of shrubs and trees must be recognizable. The following pages describe some methods to reproduce these various types of vegetation.

HOW TO PROPERLY USE
AN APPLICATOR.....28
REALISE SHRUBS34
TREE TRUNKS
USING A 3D PENCIL37

*Tree
strata*

*Shrub
strata*

*Herbaceous
strata*

*Moss
strata*

How to properly use electrostatic fibres **AND AN APPLICATOR**

To start installing grass on his 00-9 layout, Éric Fresné used an electrostatic applicator. He attempted to obtain the best possible results with a tool that is now commonplace in many modellers' workshops.

Text and illustrations: **Éric Fresné**



Applying vegetation to the ground is a crucial phase in successful layout scenery. Electrostatic applicators are a great help for this type of work.

Because of its theme – the 1920s in the Liberated Regions of France – Quittancourt is a layout where scenery plays a major part. The area modelled is located behind the front, where fighting has caused little or no damage, but where all civilian activities have been interrupted for a full 5 years. The fields have been left to themselves, and there is plenty of vegetation. Right from the outset, I therefore planned to model extensive areas of grassland, through which the 60cm gauge track would run. Electrostatic fibres very soon appeared as being a must for my scenery.

THE BASICS OF THE SYSTEM

All electrostatic applicators, whether off-the-shelf or home-made, work on the same principle. In summary, a condenser converts the energy provided by a low-voltage generator (9V battery) into a very high voltage current (several thousand volts) but of very low intensity. In practice, the current thus created will generate an electrostatic field between the appliance and any surface coated with damp glue with which the ground wire is in contact. A field sufficiently strong to move and direct the electrostatically charged synthetic fibres, loaded into the hopper of the appliance, towards the field in question.

I opted to use a Pro Grass Micro Applicator produced by Warworldscenics for Peco (ref. PSG1). Priced at 60€, the appliance supplies a 5 kilovolt current that generates a field sufficient for ordinary applications.

Almost all the firms that sell scenic materials have a range of electrostatic fibres in their catalogue. The choice of specific products is up to the user. But one snag must be avoided. Even though a lot of progress has been achieved in this area, some brands still market shiny fibres that are very unrealistic once in place. For this project, I chose Peco and Mininatur fibres whose aspect is pleasing.

The choice of shades to use depends directly on what you want to represent. Keeping in stock some 10 different references in several lengths is by no means a luxury. And remember that you can always blend products to obtain a specific shade or effect. You will also need to consider what type of adhesive to use. For all my work, I used matt acrylic medium from the Liquitex range, either undiluted for application to the baseboard, or diluted and sprayed on for any touching-up. A spray can of adhesive can also prove useful for finishing work. ■■■



The right applicator

The Peco Pro Grass Micro Applicator PSG1 is an affordable, flexible, easy to handle tool, sufficiently powerful to decorate the whole of a sizeable layout.



1 Peco markets its fibres as blends of various shades sold under names referring to the seasons (spring, summer...) or to the condition of the plants (patchy, dead...).



2 On the contrary, the Mininatur references are all the same colour, but can be blended easily. The medium green in the foreground comprises yellow and dark green in equal parts.

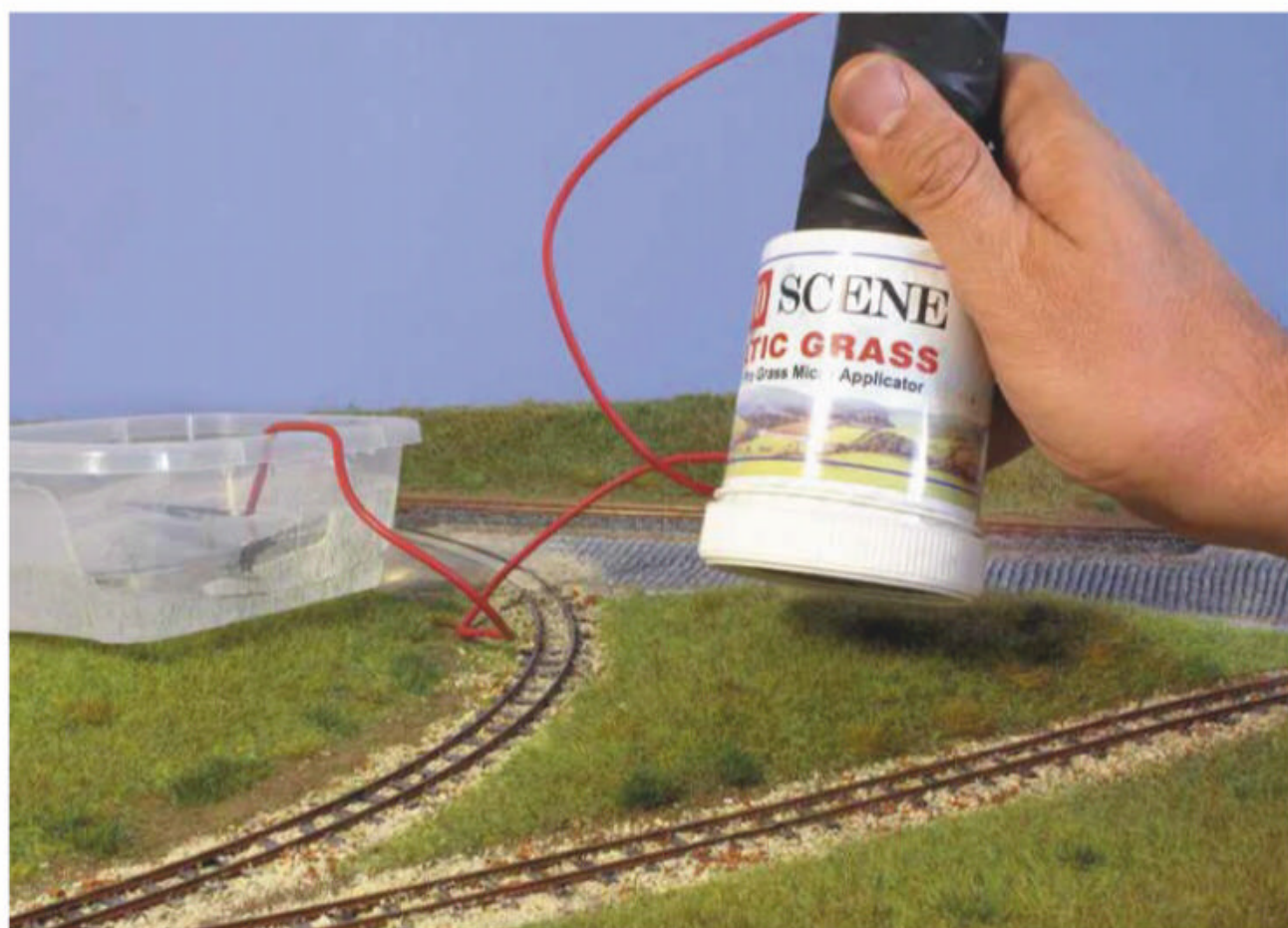
PROPER USE OF THE APPLIANCE

Before starting work on my layout, I shopped around to identify the methods most used by modellers. Internet, and in particular YouTube, is packed with tutorials that help

to figure out how best to proceed. François Fontana was also of great help to me in providing advice. To get my hand in, I also applied a fair amount of fibres to sheets of cardboard. The result of these various experiences is described below.

3

To generate an electrostatic field on your entire work area, simply dip the crocodile clamp which acts as earth wire into a water-filled jar. The effect is guaranteed.



Equipment

- Electrostatic applicator
- A spray bottle
- Matt acrylic medium
- Diluted medium
- Woodland Scenics fine moss, ref. T49
- 2mm fibres for the background
- Various shades of 4mm fibres for increasing the height of the grass

MAKING A MEADOW

When observing reality, one realizes quickly that a grassy area, if allowed to evolve freely, soon displays a whole series of green, yellow and brown shades. This is fairly easy to model using an electrostatic applicator. But before applying your grass, it is worthwhile preparing the surface to be treated. After having applied a coat of brown acrylic paint, I chose to sprinkle sieved earth around the edges of the meadow, completed with a small amount of fine moss from the Woodland Scenics range. Once this base coat is thoroughly dry, I move on to applying the static fibres. All the following stages take place non-stop, without waiting for the

coats to dry out. First, I apply a coat of matt acrylic medium with a paintbrush and then my 2mm long fibres, fairly densely packed. The surface will look like a golf green and this isn't the effect I am after. So I pulverize, in successive steps, medium diluted with 50% water and apply various shades of 4mm fibres. Proceed in stages. Don't hesitate to vary the shades until the result is fully satisfactory. A cardboard mask with a hole cut out, placed behind the grille of the applicator hopper, allows for a more accurate application of the fibres. Remember to enhance the relief by darkening the hollows and lightening the hills. ■■■



4 Begin by applying your work area with matt acrylic medium.



5 Sprinkle your base: 2mm "spring" light green fibre for an ordinary meadow.



6 One small area after the other, spray medium, diluted with 50% water.



7 Apply various shades of 4mm fibres. Your meadow is taking shape.



8 To give your meadow a bit of relief, don't hesitate to work freshly glued fibre with your finger by pushing it into heaps. A second coat of 2mm fibres, followed by 4mm ones, will create irregular areas in the vegetation.



9 By varying the shades of the base and cover, you can evoke different types of vegetation. In this case, a hay yellow base represents a somewhat dry embankment.

Equipment

- Electrostatic applicator
- Baking paper
- Cardboard sheet
- Dropper bottle
- Acrylic matt medium
- 2, 4 and 6mm fibres

DIRT-CHEAP CLUMPS

Almost all scenic materials manufacturers have clumps of grass in their catalogue, but at horrendous prices. I obtained a largely similar result to commercial products using my electrostatic applicator. To begin with, I fix a sheet of baking paper (sulfurized paper) on a sheet of rigid cardboard. I place small drops of medium on the paper and immediately apply 4mm fibres. I turn the cardboard sheet upside

down to remove any surplus fibres. The result is scrutinized and if I find the clumps a bit skinny, I sprinkle on another round of fibres. After about 20 minutes, my sheet is full of dozens of clumps of different shades. Once the medium has dried, the clumps of grass are very easily removed from the baking paper. All that is then required is to glue the clumps in place on the layout with a drop of medium.



10 Place drops of matt acrylic medium on a sheet of baking paper.



11 Sprinkle on a generous amount of 4mm fibres.



12

Remove any excess fibres by turning the sheet upside down. Your clumps of grass are ready.

A WASTELAND

In this last case, the purpose of applying static grass is to show up and enhance a mineral soil that has been created previously. I opted to sprinkle sifted earth onto a coat of medium (see VL 96), as well as various sands and pebbles. When this sub-coat is dry and that its appearance is satisfactory, I try to apply the static grass randomly to represent the << haphazard >> growth of vegetation. To achieve this result, I decided to spray the acrylic medium onto my support. Beware: this method is far from being clean! So I begin by covering the

adjacent areas with old brown paper bags. Once this is done, my method consists in coating a 20mm spalter brush with medium, in folding the brush backwards and in letting it go suddenly. Drops of medium are sprayed in various sizes, which I equalize with a paintbrush if necessary. All that remains to be done is to apply 4mm fibres and to Hoover off the excess before examining the result. A second application can sometimes be required. To improve the appearance of my wasteland, I complete the job by gluing clumps of various shades. ■

Equipment

- An electrostatic applicator
- A 20mm spalter brush
- Acrylic medium
- 4mm fibres
- Clumps of grass



13 Using a 20mm spalter brush, spray matt acrylic medium randomly over your support.



14 Apply 4mm fibres, extending beyond the areas coated with glue.



15 Hoover off any excess fibres and complete your grassy surfaces with clumps of grass of various shades. Your wasteland is made.

To find out more

Take a look at tutorials on the Peco YouTube channel.



Realistic **SHRUBS**

When he presented his layout on the Voie Libre forum, and given the quality of its vegetation, it seemed obvious to us that Michel Altorf-van der Kuil had to explain his method for modelling shrubs. This article tells you the story.

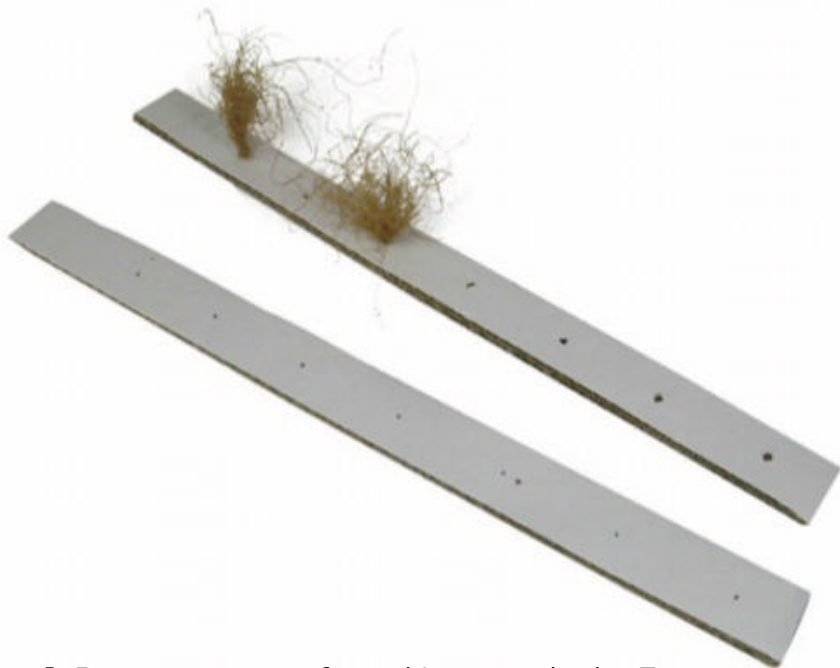
Text and illustrations: **Michel Altorf-van der Kuil**



All is quiet on Michel Altorf-van der Kuil's layout. Life is rhythmmed by the trains in an impressively realistic environment.

When I began building my layout, I opted to create my own shrubs. This is an easy and enjoyable job, and the outcome is realistic. Making shrubs requires various materials. You'll need to procure plant fibres (coconut or sisal) as well as a range of flock materials: 4mm static grass, fine moss

and Noch foliage (ref. 07142/07144/07146). You'll also need contact adhesive and repositionable adhesive in a spray can. Don't forget acrylic paint, also from a can: black, grey and grey-brown. An electrostatic applicator, although not essential, makes work significantly easier.

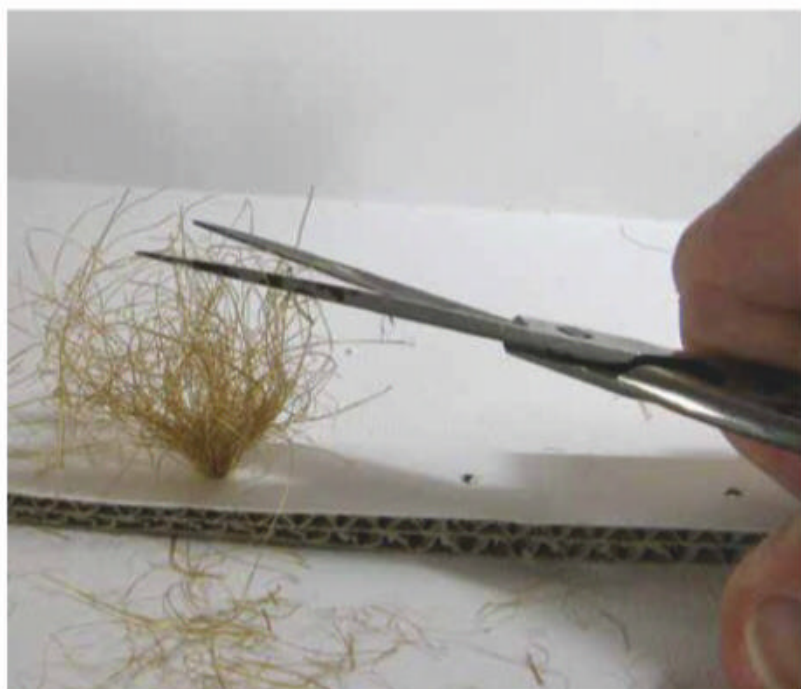


1 Prepare a support for making your shrubs. To this end, cut a 2.5 to 3cm wide strip out of packaging cardboard. Drill holes every 3cm or so. This support will help you handle your shrubs more easily during the various fabrication stages.



Sisal fibre can also be found in a length of gardening twine.

2 Making shrubs calls on coconut fibre. This type of fibre can be bought from online shops dealing in floral arrangements. They also sell pouches of coloured sisal. In principle, the shrub construction method is the same for both materials.



3 Take a bunch of fibres, fold it in two, twist and glue the base so as to be able to insert it into one of the holes in the cardboard support. Spread out the fibres horizontally. In this way, you obtain the final width of your shrub. Arrange the fibres so they are evenly spread out and trim the tips to give your plant its general shape.



4 The next stage will consist in giving the plant some volume. Coat the structures with adhesive from a spray can, and sprinkle them with 4mm static fibres. Keep a light touch. The shrub must retain an airy structure.



5 Spray on a coat of black paint. This will conceal the light shade of the coconut fibre. Once the paint has dried, apply a light coat of grey and, immediately after, a second coat of grey-brown. These shades will give relief to your shrubs.



For the same shrub, choose similar colours, always starting with the darkest shade.

6 The foliage consists of two type of flock material: fine moss and Noch leaves. Spray a light coat of adhesive onto the bush and sprinkle it with moss flock. Above all, take your time and proceed by small applications. Don't overdo it and remember to cover all sides. Once satisfied with the result, sprinkle on some Noch leaves using a sieve. Finish the job by applying a small coat of moss flock of a lighter shade. The aim is simply to add a slight touch to your foliage.



7 Allow your shrubs to dry on their support. At this stage, you can still make a few small adjustments.



8 Once the shrubs have dried thoroughly, cut them off flush with the support. The adhesive used to coat the base at the outset preserves their shape.

To find out more

See Michel's layout on the Voie Libre forum: <<http://forum.e-train.fr/viewtopic.php?f=4&t=87673>>.



9

Your shrubs now being ready, determine an arrangement that looks natural. Position them by varying the colours from one to the other. Place smaller shrubs in the foreground or between larger ones to give the scene more relief. Once you are pleased with the composition, glue the shrubs in place.

You now have a fine thicket on your layout, produced in one hour or so.



TREE TRUNKS

using a 3D pencil

Shrubs and bushes can also be made using a 3D pencil. This article tells you how.

Text and illustrations: François Fontana

A 3D pencil consists of a heating module, an extruder and a calibrated nozzle which extrudes a PLA or ABS wire and generate volumes. While it's complicated to obtain clean surfaces, and perfect geometric shapes, the pencil is particularly well-suited to design complex and convoluted shapes. I suggest we create bush structures using a very simple and recreational technique.

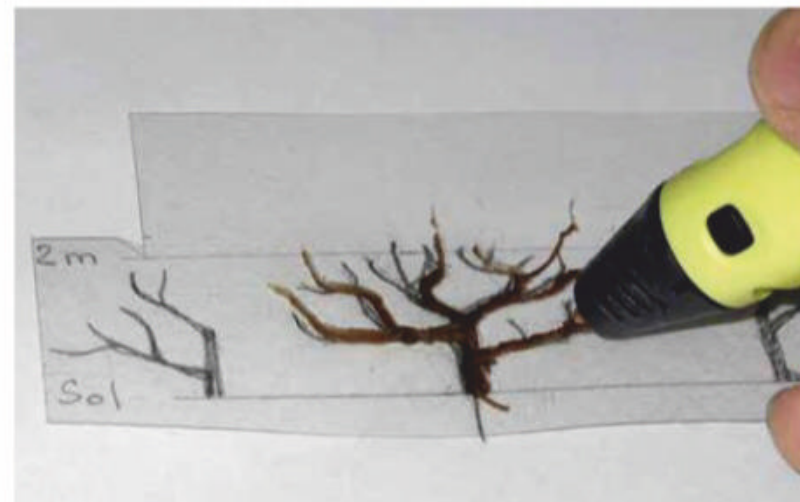


Some pruning will be needed before the end of the year, the bushes are encroaching upon the trackbed.

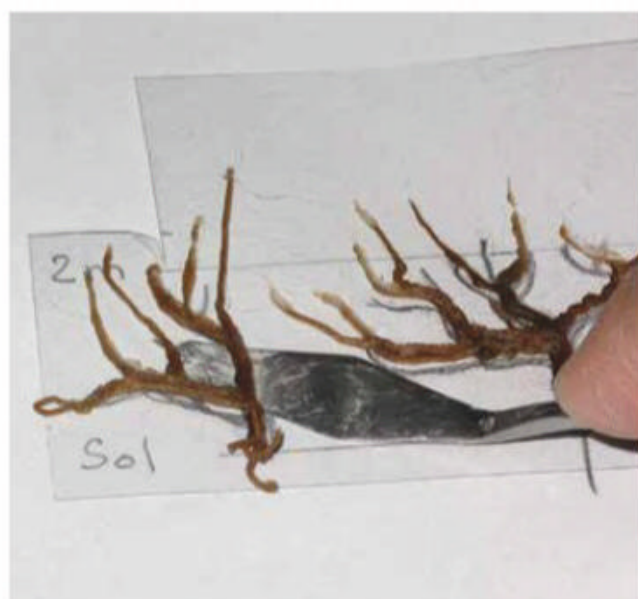
SCENERY

The pencil operates on 12V DC.

1 The pencil I use is designed for 1.75mm diam. PLA or ABS wires. The extruder and the heating module are contained inside the body, and the nozzle is located at the end. The small LCD screen and its two knobs allow for the selection of the type of wire, PLA or ABS. On the right-hand side, accessible with the forefinger for right-handed people, the cursor that adjusts the forward speed of the wire. On the left-hand side, under the thumb, the two knobs to move the wire forwards or backwards in the extruder.



2 I use a PLA wire known as "wood texture". Actually a type of plastic loaded with micro-bubbles of air. On a sheet of paper, covered with a sheet of transparent acetate, I draw my dimensional points and the rough sketch of a bush. I also draw two half-structures. I start by drawing the structure of my bush on a flat surface.



3 With a spatula, I unglue the two half-structures that will be assembled at right angles onto the general structure of the bush, instantly giving it volume.



4 Using the 3D pencil, I add material which, by fusion, will solder the various parts that are in contact.



5 I then use the hot extrusion nozzle to soften the plastic and shape some branches. I add as many additional branches as required. To do so, I glue a plastic wire and stretch it out. Once it has dried, I free it from the 3D pencil.



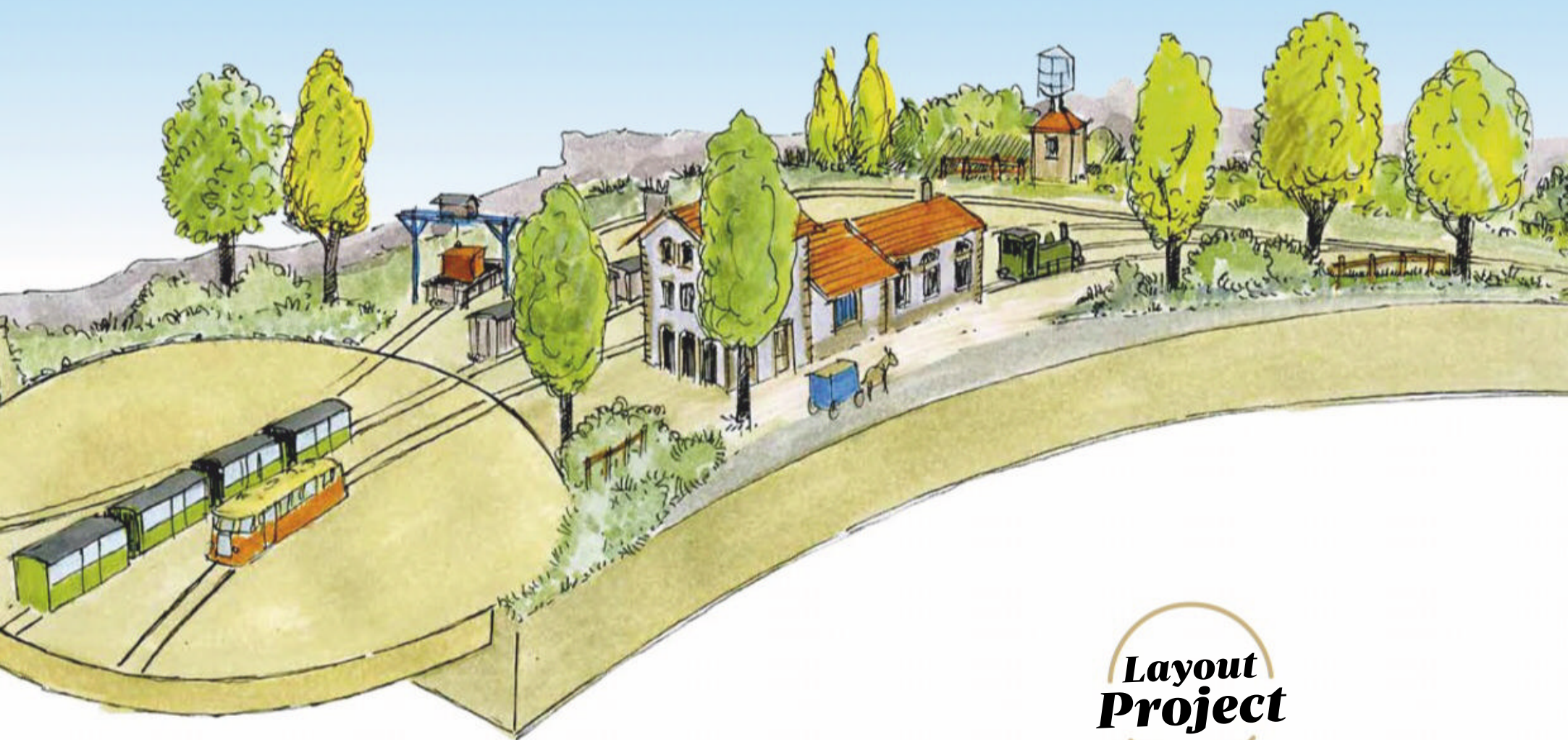
6 With a pair of cutting pliers, I trim the tips of the branches. My bush has begun to take on a pleasing appearance.



7 The trunks are coloured by dry-brushing grey or light beige acrylic paints. Avoid the eternal brown shade that is hardly ever found in nature!



8 The structures are covered with stretch netting, then flocked. As explained elsewhere in this issue by Michel Altorf-Van der Kuil, all that's left to do is to plant your bushes along the lineside. Or elsewhere...



Baigneux-les-Juifs station on the CDCO network

Here is an attractive station for modellers, as it is a kind of all-in-one. The same building combines the passenger station, the goods shed and a single-track engine shed. Let's explore!

Text and illustrations: Vincent Lepais



Coll. F. Fontana

Baigneux-les-Juifs, a train runs into the station.



The gable of the passenger station building, June 2019.

Baigneux-les-Juifs used to be the terminus of a metre gauge branch line originating at Aisey-sur-Seine, on the Chemins de Fer Départementaux de la Côte-d'Or network, itself controlled by a larger railway operator, the Chemins de Fer du Sud de la France. The line obtained governmental approval on 23rd July 1892 and was inaugurated on 1st December 1895. It closed on 31st December 1933. The other lines of the network ran from Dijon to Champlitte, from Dijon to Beaune, from Beaune to Semur-en-Auxois, from Dijon to Châtillon-sur-Seine (via Aisey-sur-Seine, the junction for Baigneux) and from Meuilley to Nuits-Saint-Georges.

THE STATION

The station featured a weighbridge, a 3 ton loading gantry on its transshipment siding, a turntable and a water tank. The building is identical to the station at Aisey-sur-Seine, but with the addition of an engine shed-cum- dormitory. The shed had an inspection pit with the track supported on vertical struts.

The whole building is erected on a basement wall of paired stones, topped with a smooth strip. This basement was measured stone by stone to ensure the accuracy of the drawing.

THE PASSENGER FACILITIES

Let's start by describing the passenger building. On the ground floor level, it featured two French windows on the track side, with "waiting room"



The large building seen from the street side in June 2019. It is now the local DIR office.

and “station-master” signs above them. On the street side, one French window and one plain window. Three doors could be found on the gable at the Aisey-sur-Seine end, two giving access to the “gents” and “ladies” toilet facilities, and the third to the station-master’s office.

The first floor featured twin windows on the gable at the Aisey end, as well as two windows on each façade. The second floor had windows only on the gable ends, aligned with those of the first floor, and of slightly different dimensions.

THE GOODS FACILITIES

The goods shed featured an open platform on the trackside, destroyed at an unknown date. I therefore had to recreate it using period postcards. My apologies to readers, as no original document showing accurate measurements could be found.

Two large doors opened on each side of the shed, closed by metal curtains over part of their height. The top part of the doors was fitted with a wood lintel above which brick dowels provided natural ventilation. These dowels were found on other CDCO stations: Aisey-sur-Seine, Arcenant, Lamargelle, Marsannay-la-Côte... The doors were crowned with a cut stone segmented arc lintel. Both façades of the goods shed were sheltered by overhanging framework, whose support legs rested on protruding stone corbels. This framework, although aligned on that of the remainder of the building, was independent from it. It is no longer in existence.



The long building at Baigneux-les-Juifs seen from the track side as it is nowadays, June 2019.

THE LOCOMOTIVE FACILITIES

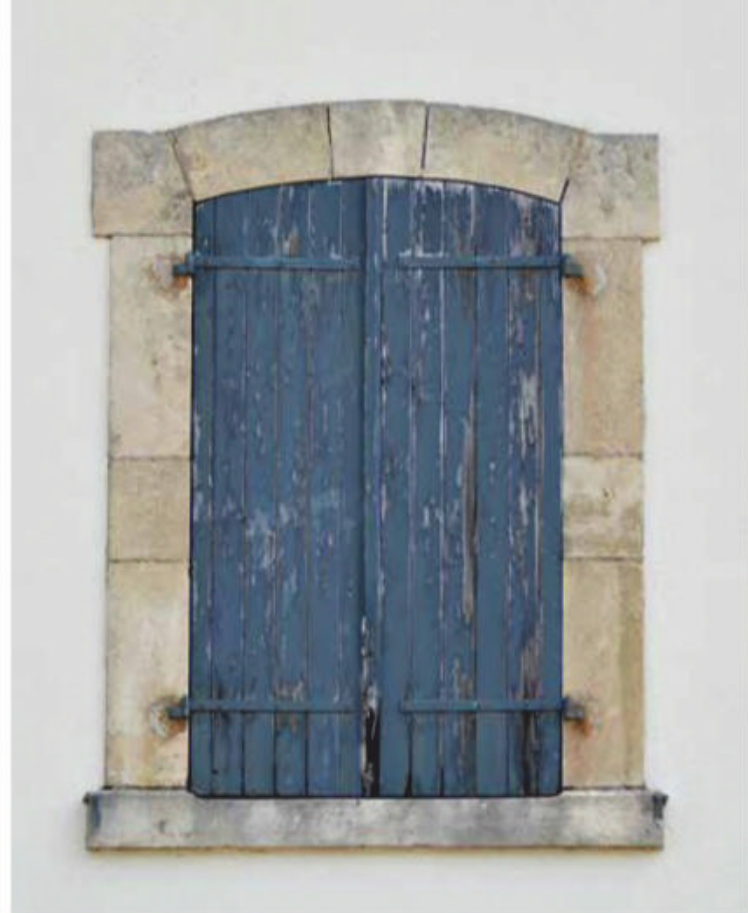
The engine shed featured 3 transom windows on each facade, closed by wooden shutters on their lower half. The gable was fitted with a 3-leaf door, two articulated halves and another opening part. This arrangement was somewhat uncommon. Above the door and in the middle of the gable, an oculus window provided additional lighting. Currently, the station accommodates the DIR (public body in charge of road maintenance), which has modified the appearance of the building. Despite these modifications, it proved possible to take measurements enabling a dimensioned diagram to be drawn up. We hope this small station in Burgundy will be a source of inspiration. ■■■

LAYOUT PROJECT



On the facades, the cut stone cartouche displays the name of the station. The engraving, emphasized with blue paint, is still visible in June 2019.

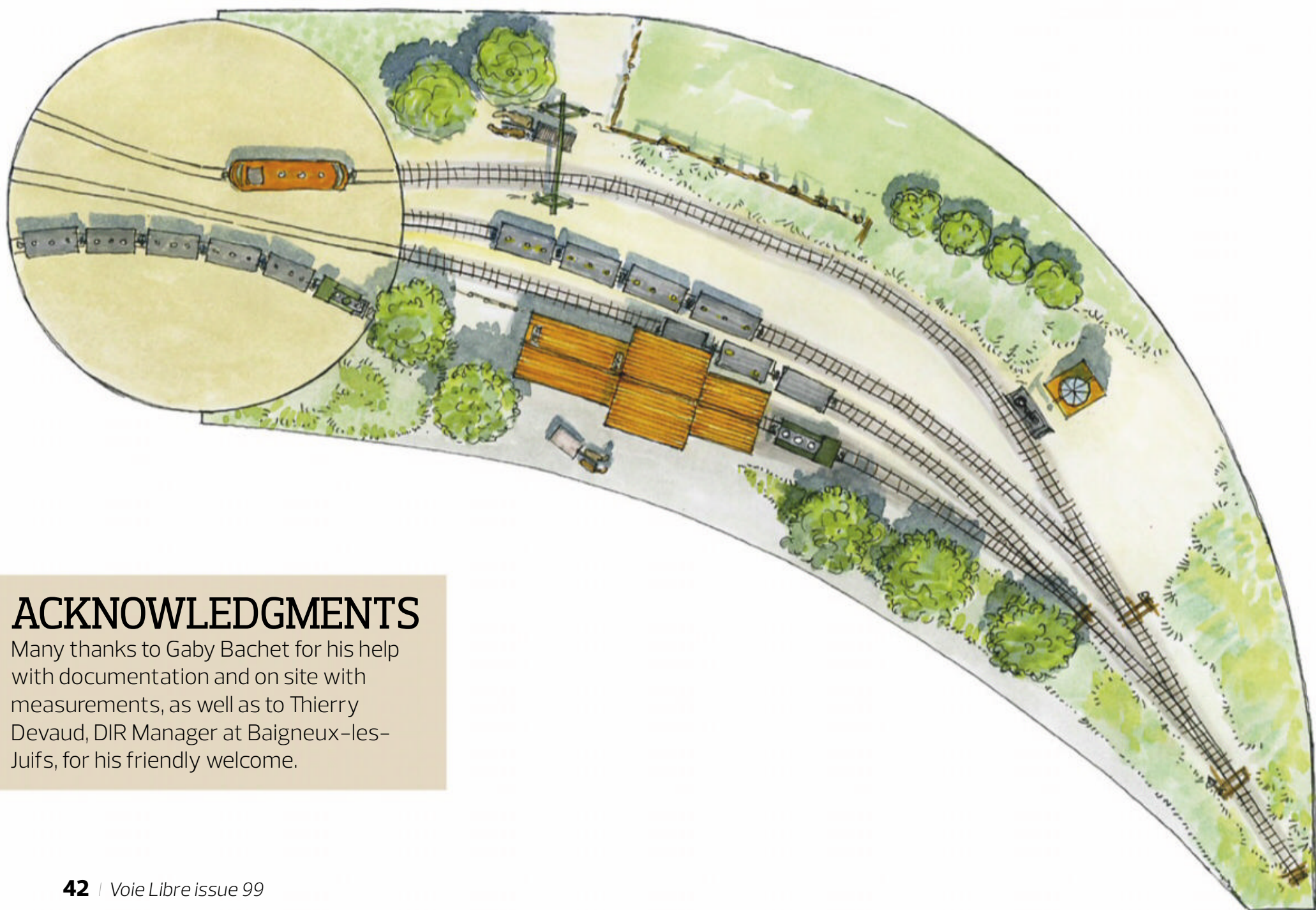
Coated stonework, cut stone facings, wooden shutters with outside hinges, a highly classic construction, still in good condition in June 2019.



MODELLING THE STATION

Should you decide to build this structure, you will need to add locomotives and wagons. The network operated Schneider type 110, Corpet-Louvet and Pinguely 0-6-2 T engines, 17.5 ton Corpet-Louvet

0-6-0 T engines, 25 ton SACM 2-6-0 engines (also supplied by Piguet, Pinguely and Corpet-Louvet), as well as two Orenstein & Koppel 0-10-0 T engines. Apart from these two last locomotives, all the engines were fitted with aprons concealing the motion.



ACKNOWLEDGMENTS

Many thanks to Gaby Bachet for his help with documentation and on site with measurements, as well as to Thierry Devaud, DIR Manager at Baigneux-les-Juifs, for his friendly welcome.

Plan of the station building in the central folder

Some surviving Schneider engines found their way to Germany. Some Piguet 2-6-0 T engines ended their career on the Chemins de Fer du Cambrésis system, where they assisted the Corpet-Louvet 2-8-2 T engines whose diagram was published in VL 98. The 0-10-0 T engines were shipped to Tunisia in May 1939, then worked in Algeria in 1940 before winding up in Corsica where they were scrapped in 1955.

At a later stage, the network procured some steam railcars: the first one was of the Scotte type, built by Pétolat in Dijon, followed by two Purrey railcars. Internal combustion railcars then took over, first a De Dion-Bouton type JB machine, then a railcar built by CFMCF and fitted with a Saurer motor.

A train departing.

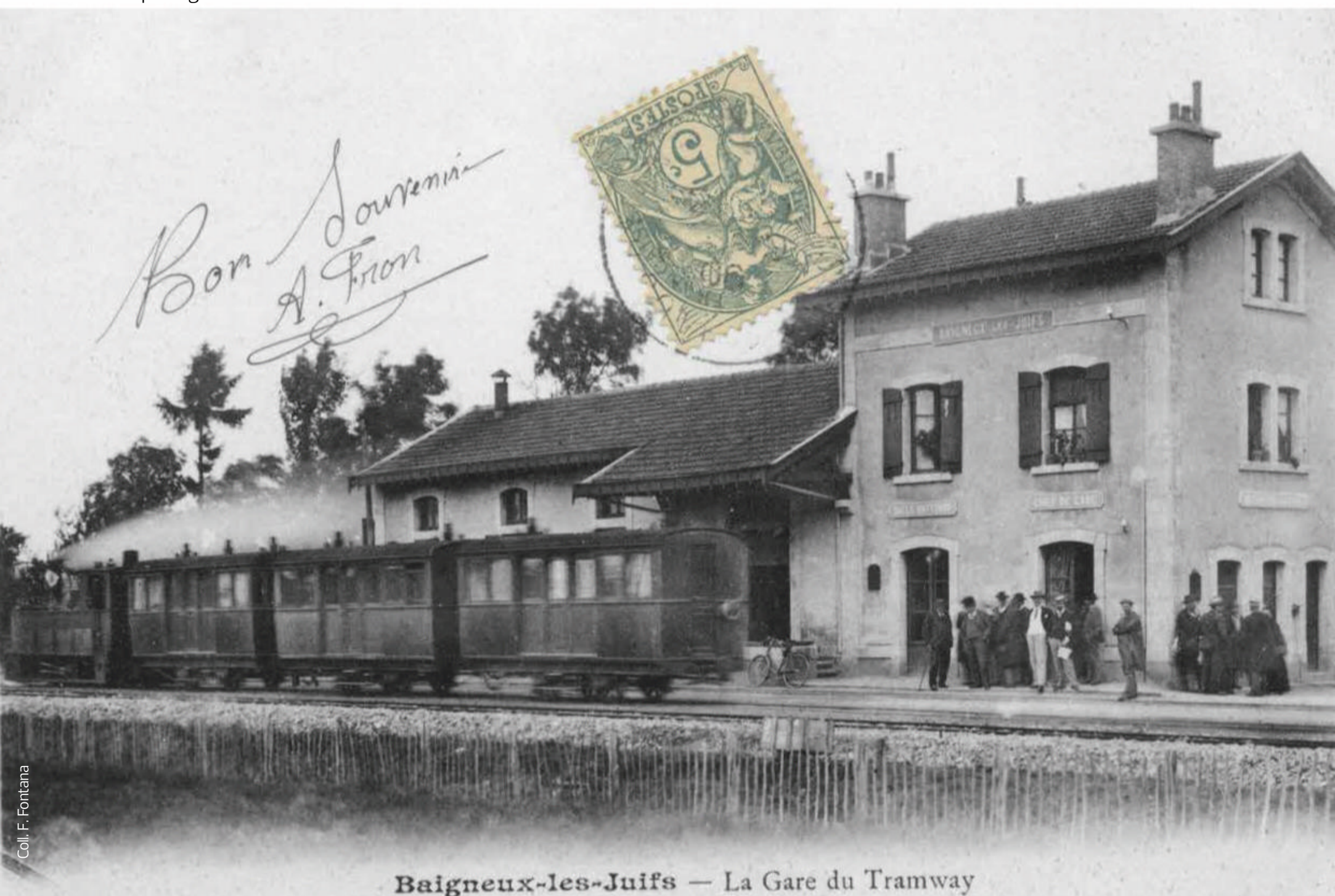


Coll. F. Fontana

Three tracks outside the station building, one of which serves the goods shed, plus a siding for the engine shed, the trackplan at Baigneux-les-Juifs is pretty basic.

FURTHER READING

Histoire des Chemins de Fer Départementaux de la Côte d'Or [History of the Chemins de Fer Départementaux de la Côte d'Or], Y. ARTUR, G. BACHET and F. CHEVEAU, Éditions du Belvédère, October 2012.



Baigneux-les-Juifs — La Gare du Tramway



It's a midget: 50mm long overall, 23mm wide and 34mm above the rail, enabling it to run everywhere.

JELLY MODELS

BADONI DIESEL LOCOMOTIVE

Jelly Models has released a 1/87 scale model of a small Italian Badoni diesel locomotive. Let's take a closer look!

H0-9
00-9

THE MODEL AT A GLANCE

Manufacturer: Jelly Models

Website: <jellymodels.com>

Model: Badoni diesel locomotive

Scale: H0-9/00-9

Weight: 40 g

Driving mechanism: Tomytec
Hakotetsu (to be procured separately)

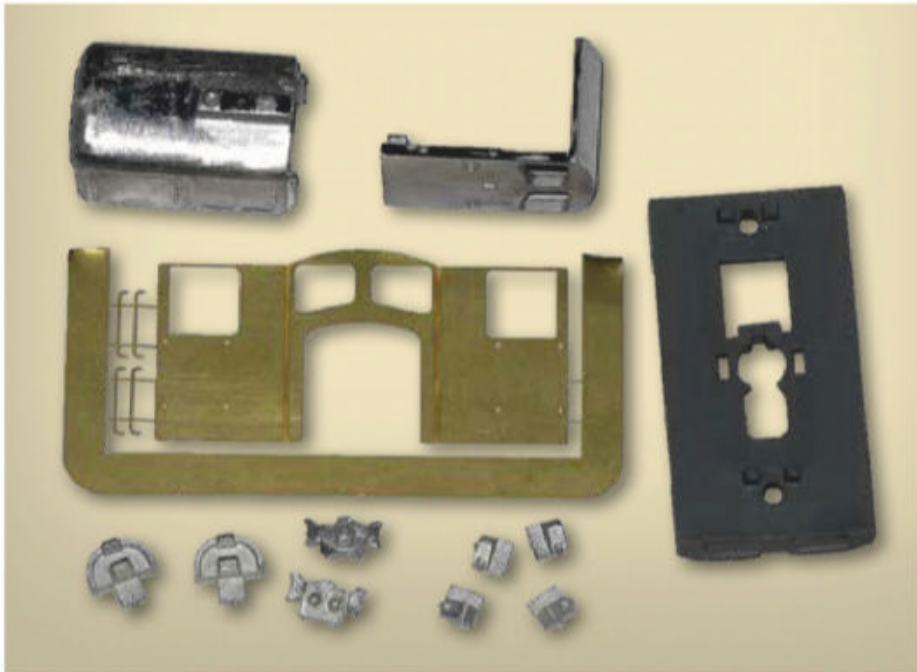
Price: 41€

Text and illustrations: François Fontana

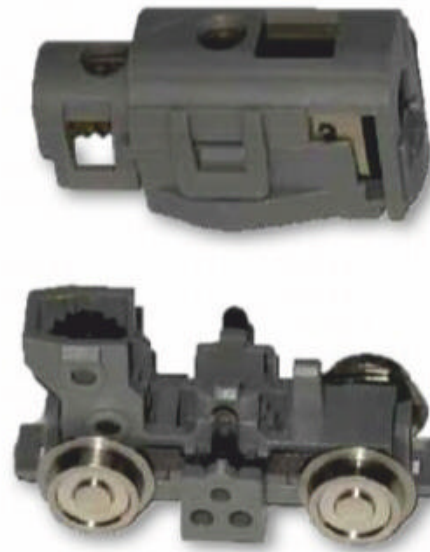
Jelly Models has opted for an attractive prototype: very typical of the 1950s, with its curvaceous bonnet rich in handrails, its bulky brushed metal radiator grille, its small Spartan cab, fitted with half-doors. This is the first time the brand offers a mixed model comprising white metal castings, resin castings and etched brass parts. It is designed to be fitted to a small and compact Tomytec Hakotetsu driving chassis, with two motorized axles, a very smooth runner.

ASSEMBLY

The white metal parts contribute to giving the model a fairly heavy weight, 40g. The cab comprises two parts, the white metal rear panel and roof, with the folded wrap-around etched brass side and front panels. The engine bonnet is in one white metal part that requires drilling to fit the handrails. The kit can be assembled with instant adhesive or with a two-part epoxy adhesive of the Araldite type, once the parts have been thoroughly de-greased with alcohol. Don't forget to sand the metal surfaces, using fine 600 or 800 grain sandpaper, this is the best



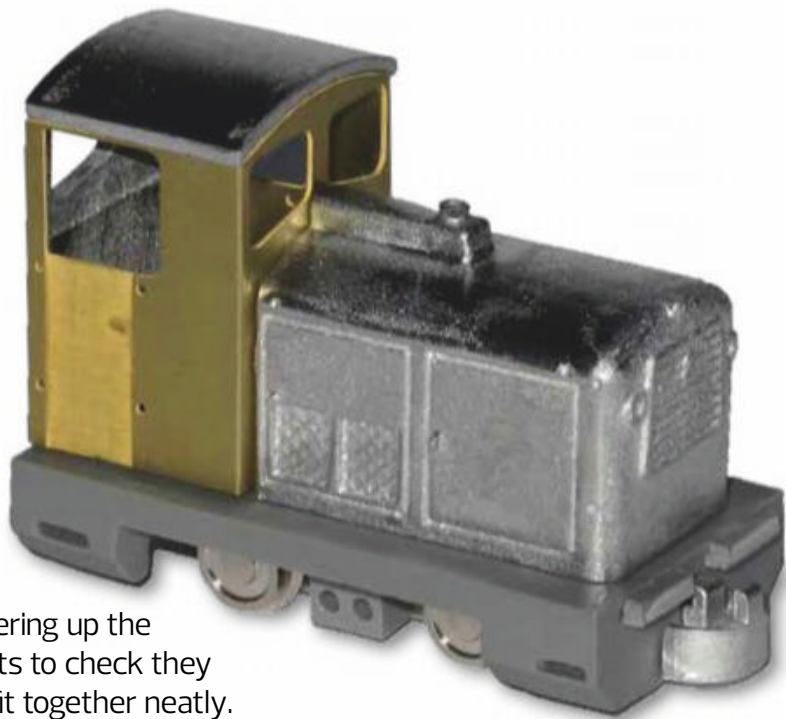
A handful of white metal, resin and etched brass parts make up the kit.



The Hakotetsu driving mechanism breaks down into two sub-assemblies: motor and chassis.



They fit together around the resin running board.



Offering up the parts to check they all fit together neatly.



The white metal sandboxes are fixed onto the running board using instant adhesive.

technique to remove the coat of oxidization that prevents the adhesive from holding. The chassis running plate, made of resin, accommodates the white metal coupler blocks and sandboxes. Gluing is easy, provided the parts are carefully de-greased. The braking gear is fixed to the bogie frame brackets on the Hakotetsu driving mechanism. Instant adhesive will not hold, so a two-part epoxy must be used! For decoration, after another round of de-greasing, I applied a coat of primer from a spray can, then acrylic shades using an airbrush. The job is completed by some generous weathering using grime, grease and rust shades. Once the driving mechanism has been fitted, the body assembly is screwed onto the running board, from below.



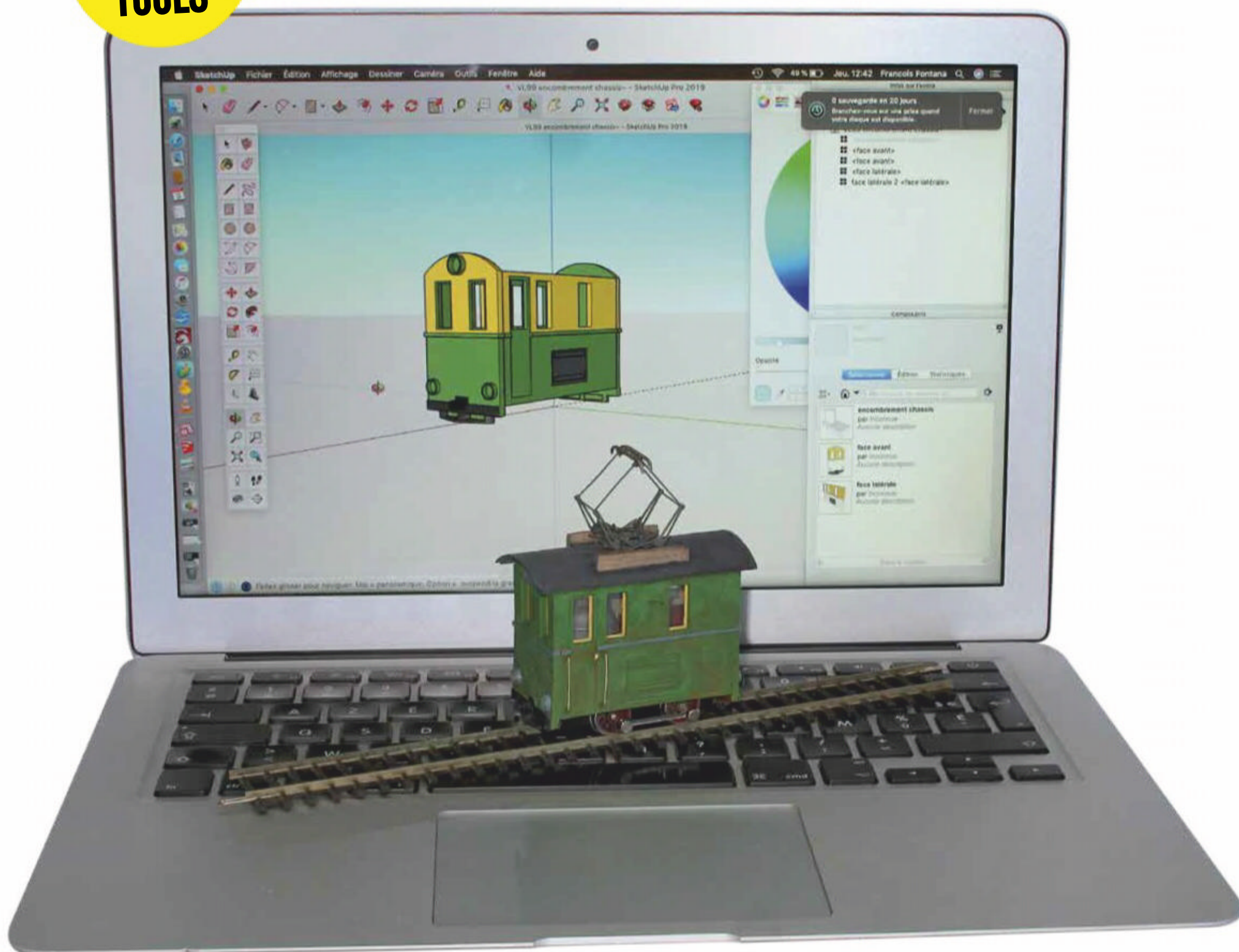
The brake blocks are fixed using two-part epoxy.

Beginning IN 3D PRINTING

3D printers and laser-cutter are new tools for railway modellers? Let's take a closer look by creating a small electric locomotive in 0-16.5 scale.

**NEW
TOOLS**

Text and illustrations: François Fontana



Computer-designed with Sketchup and partly 3D-printed, we have here an electric locomotive in 0 scale narrow gauge.

Both are very much in the news these days: the 3D printer and the laser-cutter are becoming household items due to their growing affordability. They now cost less than a mid-range locomotive. Far from replacing traditional tools, they complement them, and open new prospects for modellers. I therefore decided to build a small electric locomotive in 0-16.5 scale, using a recycled H0 standard gauge driving chassis. I chose a small freestyle 0-4-0 T produced by Mehano for its starter sets. This is a very simple model and costs next to nothing. In a first phase, I will show you how the model is designed and the approach used to achieve what seems to me like an acceptable result.

My equipment

I use a simple PC and the Sketchup software produced by Trimble. For my 3D printing, I use a Da Vinci Mini printer that cost me less than 150 euros, because its packaging was damaged! I feed it with 1.75mm diam. PLA wires. I have never up till now observed any great differences

between the wires from various suppliers, some must exist and I guess experience and time will tell!

All this modern technology doesn't preclude resorting to the good old sketchbook, pencil and ruler. It is crucial to think carefully about what you want to achieve and about how the model will be designed. Preparatory sketches are essential, as well as a series of dimensional measurements.

My printer

It is small, pleasing, but basic; no heating plate, no ultra-fine adjustments. Don't expect it to perform miracles! As soon as I received it, I undertook a series of prints. Many tests were carried out: quality of the printed layers, rendition of details, and possibility of creating overhangs! The results are easy to guess: the printer manages fine as long as you seek only simple things, including large volumes, it prints details well provided they are not too convoluted. Finally, as it is fitted with only one printing head, it has trouble dealing with overhangs, as could be expected. Therefore, ■■■



The small Da Vinci Mini 3D printer can print a volume of $15 \times 15 \times 15$ cm. Quite sufficient for a narrow gauge model in 0 scale.

■ ■ ■ I quickly realized that it would be of great help in my projects, provided I was not too demanding.

For very complex printing jobs, I call on specialized suppliers who use machines and techniques that are largely unaffordable for private individuals.

My software

Here again, I use simple software. It is not parametric and works by addition, as a sculptor would. It is more powerful than I thought and I must use one-third of its capacity at most! Operating it is straightforward: you create, by clicks and push-pull movements, simple volumes that you can then combine. A few dialogue boxes help you accurately determine the parameters of your drawing. I must add that the accuracy of the software goes well beyond the capabilities of the printer or my personal calculations. If you select an accuracy to within 1/10th of a mm, that will be quite sufficient.

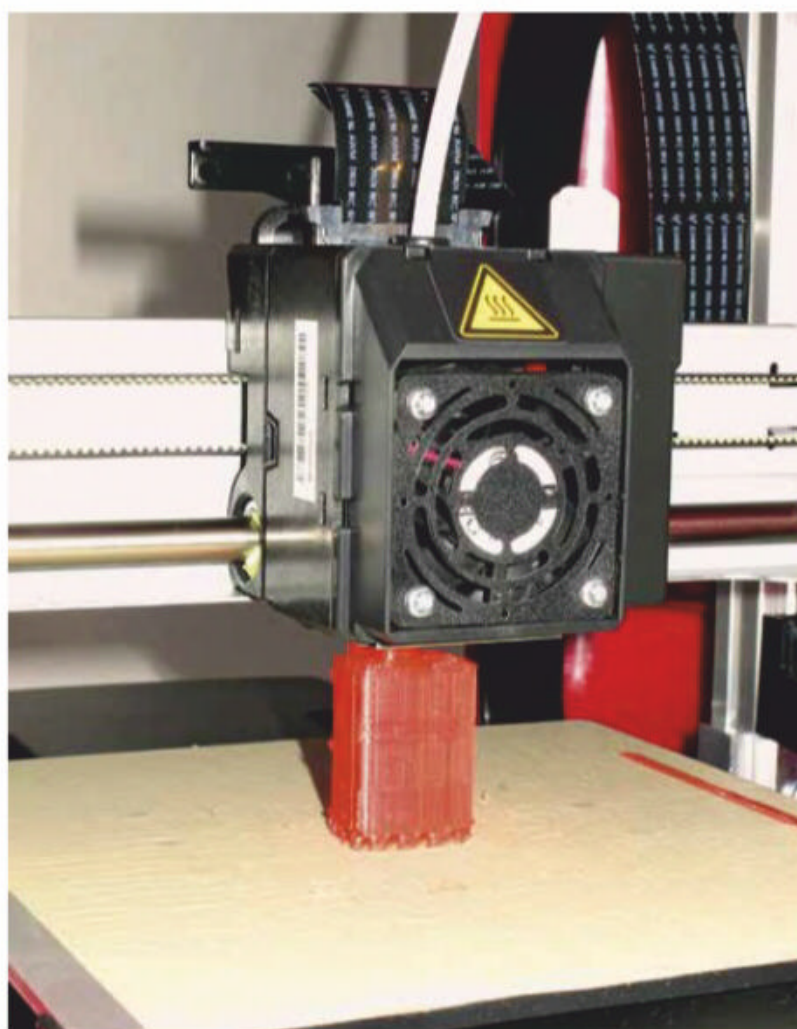
Getting down to work

The first task consists in creating a neutral

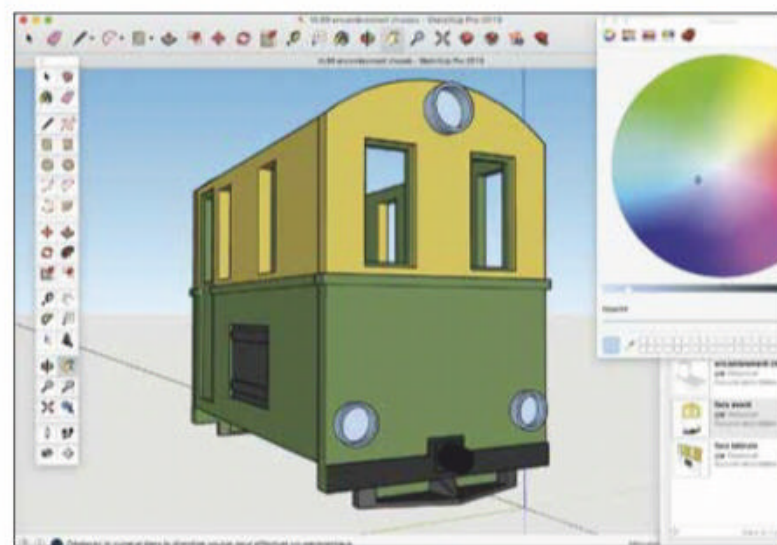
volume representing the space taken up by the driving chassis. Naturally, the locomotive body will fit over this volume, which will not be printed. To create this volume, I carefully noted its measurements on my sketchbook. Then, in the window of my software, I modeled this volume: a rectangle for the chassis with its wheels and side rods, a cylinder for the motor. Simple and efficient.

As my printer isn't fond of overhangs, I was obliged to print all the surfaces flat. My engine will therefore be printed in four different parts: two ends, two sides. These parts will then be glued together.

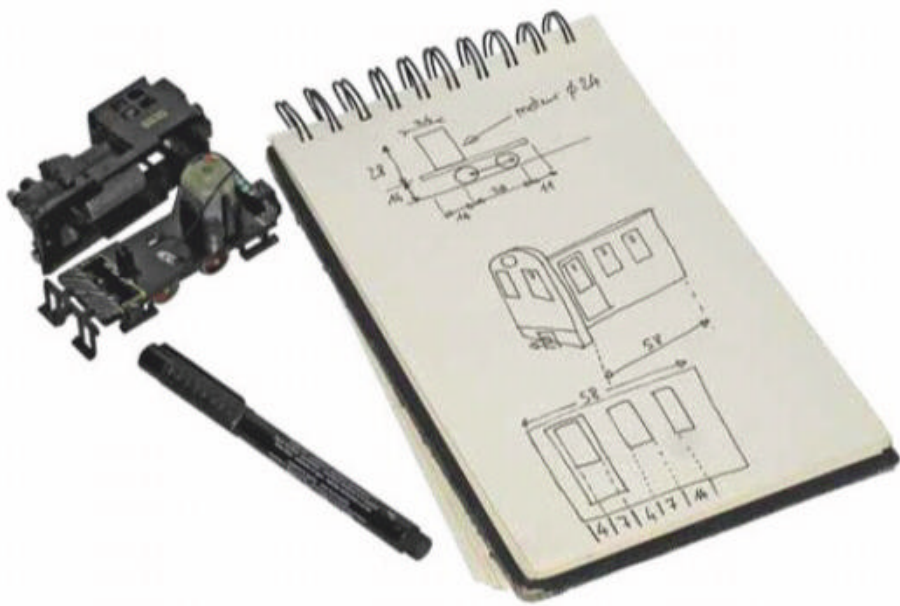
The software allows me to create, on one single drawing, as many sub-assemblies as I wish. So my locomotive will break down into a variety of components: the driving mechanism, one side, one end. There's no need to print more, as the ends and sides are strictly identical. The roof is curved, trying it to print it is a no-go as the famous printing layers and their 1/10th mm thickness leave unsightly ridges and contours. The roof will be fabricated using more traditional techniques. ■



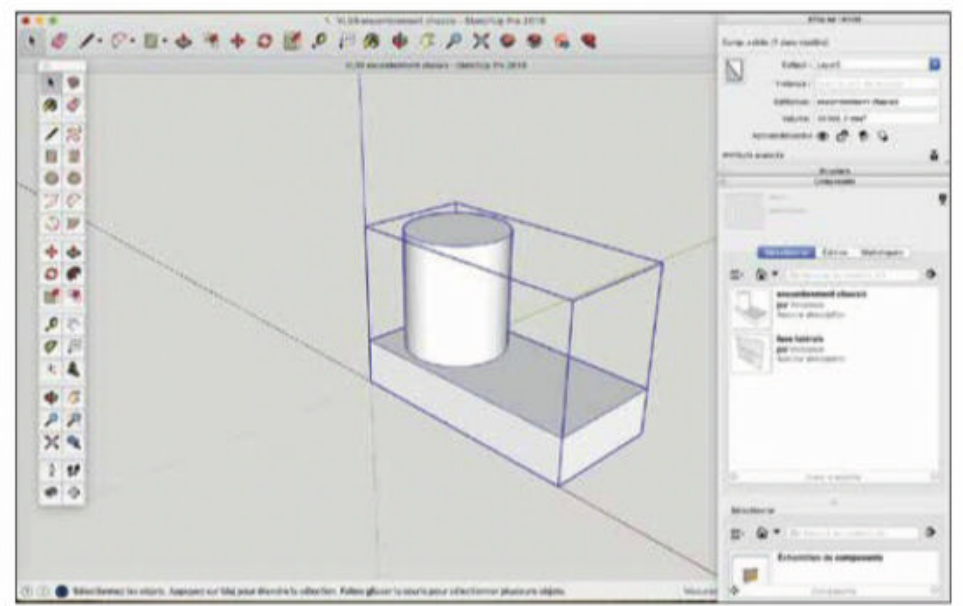
The extruder and its 0.4mm nozzle move sideways on the arm which can move up and down. The plate move backwards and forwards. The combined movement along 3 axis allows for the creation of all types of volumes.



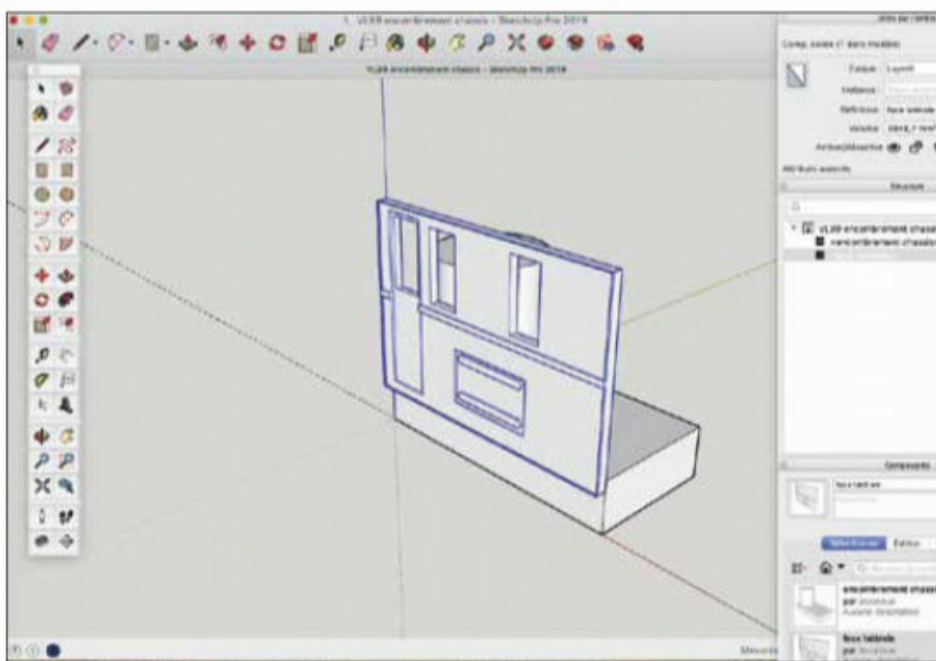
This is what I am hoping to achieve. Colouring the drawing makes it more pleasing to the eye, that's all!



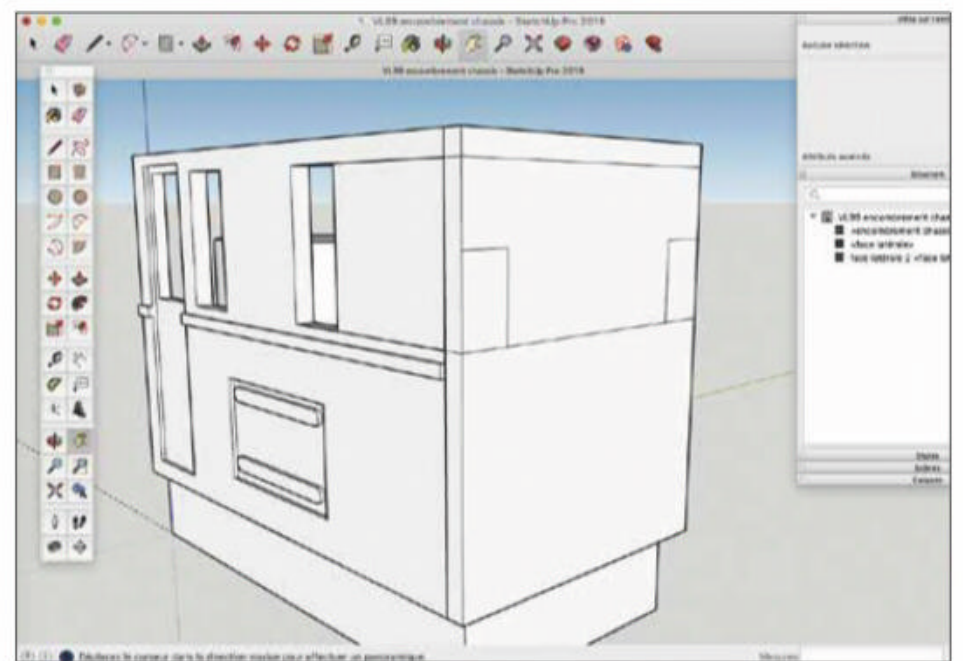
1 On my sketchbook, the essential measurements for creating my model.



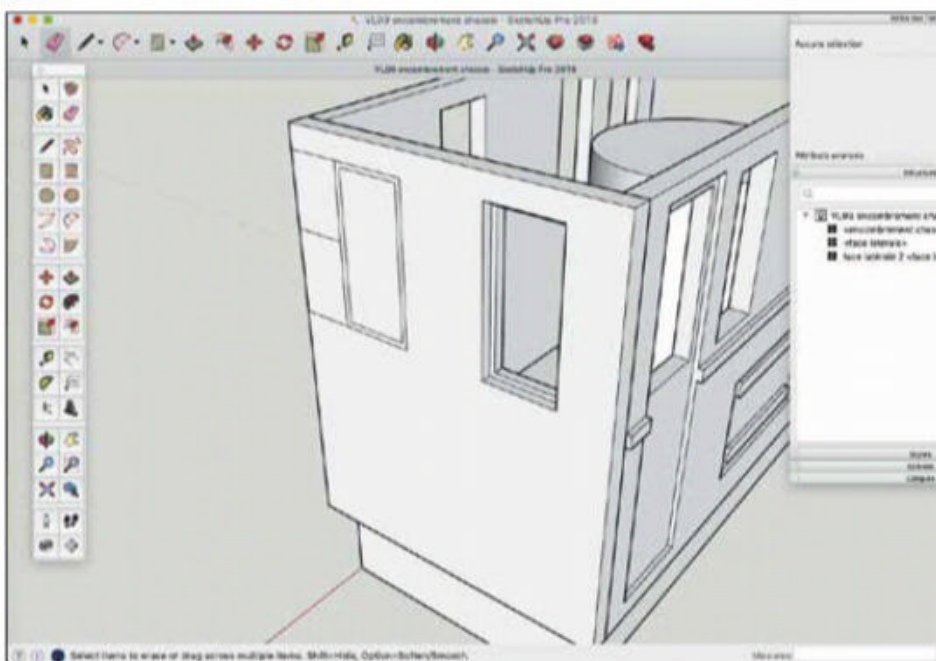
2 First sub-assembly, the highly simplified driving mechanism.



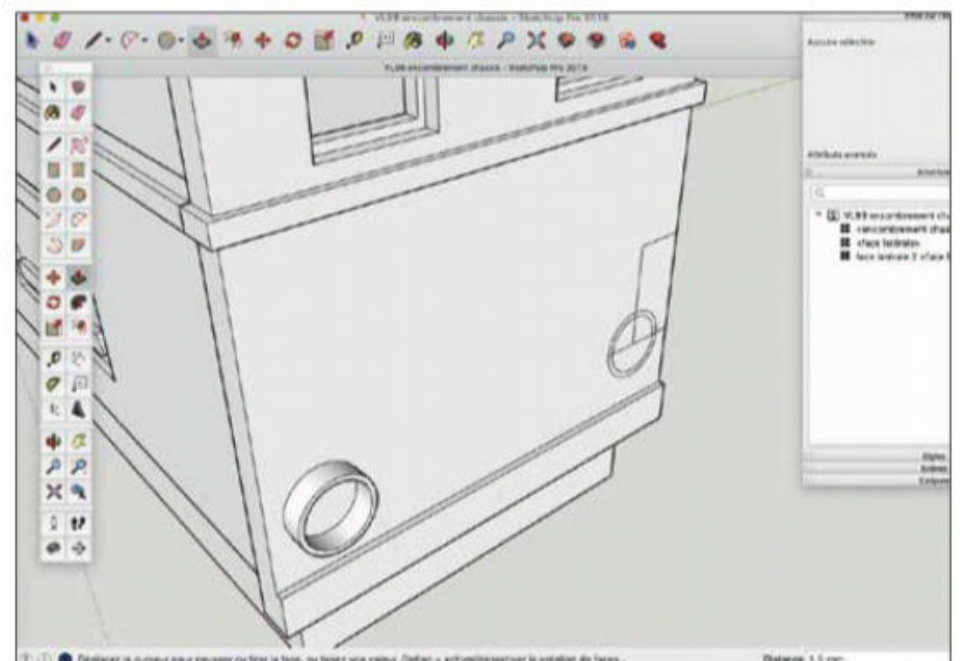
3 First stage in modeling the body: one side. It's a rectangle with windows and the door which is slightly set back. It then becomes a sub-assembly as seen here.



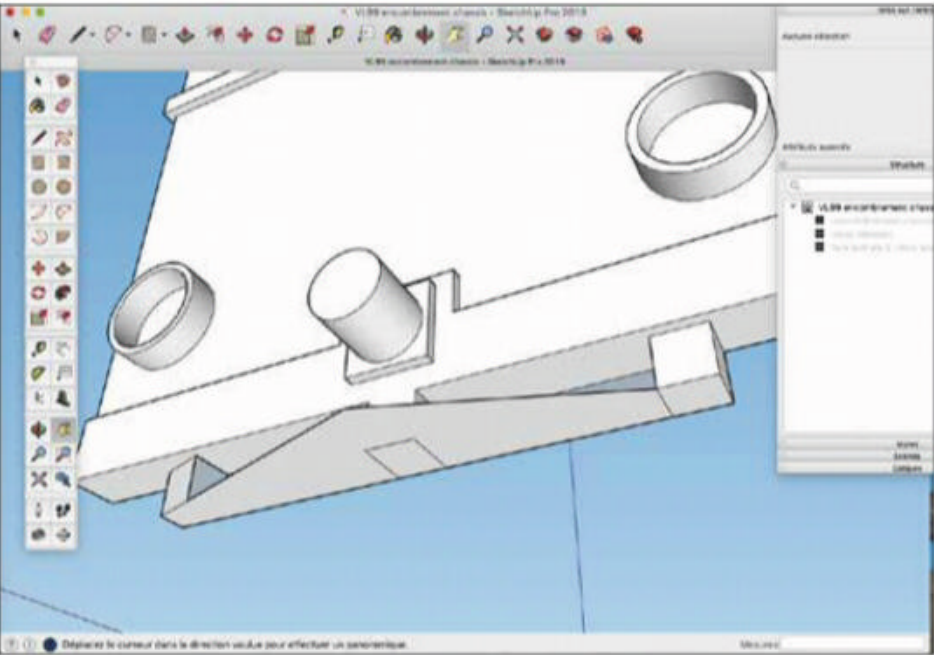
4 Let's move on to the front panel. I start by building a 2mm thick rectangle. And all I need is lines, which my software will trace perfectly straight between the reference marks, to extend the design of the body side. I also draw reference marks for the apertures.



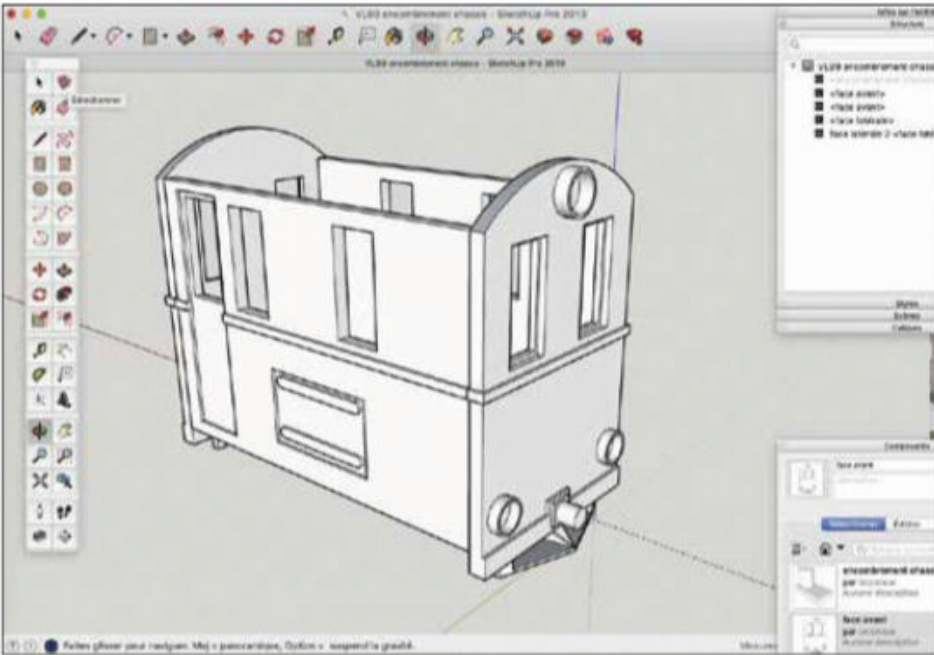
5 As can be seen, I have drawn the windows and their inside frames. To the right, I extruded the openings by 2mm, which is the thickness of the panel, and the frames, set back by 1mm only.



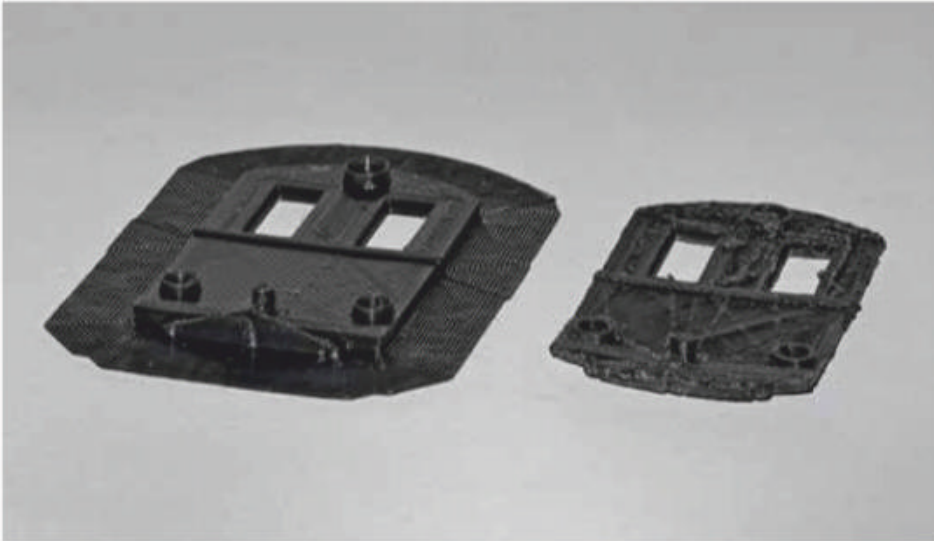
6 I carried on by creating the body strip, and the two lamps at the bottom of the front panel.



7 I had fun creating small guard-irons. This part is angled, as can be seen to the left, but simply built with cubes, which will be sectioned at a later stage as is visible to the right.



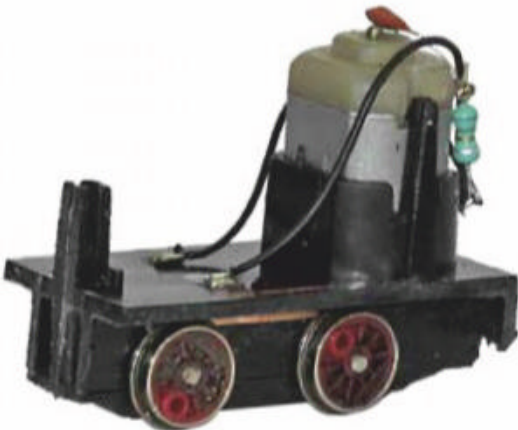
8 My drawing is now complete. The two sub-assemblies are mirror-duplicated, so that I can see what the final product will look like. The chassis is masked, there's no need for it on this image.



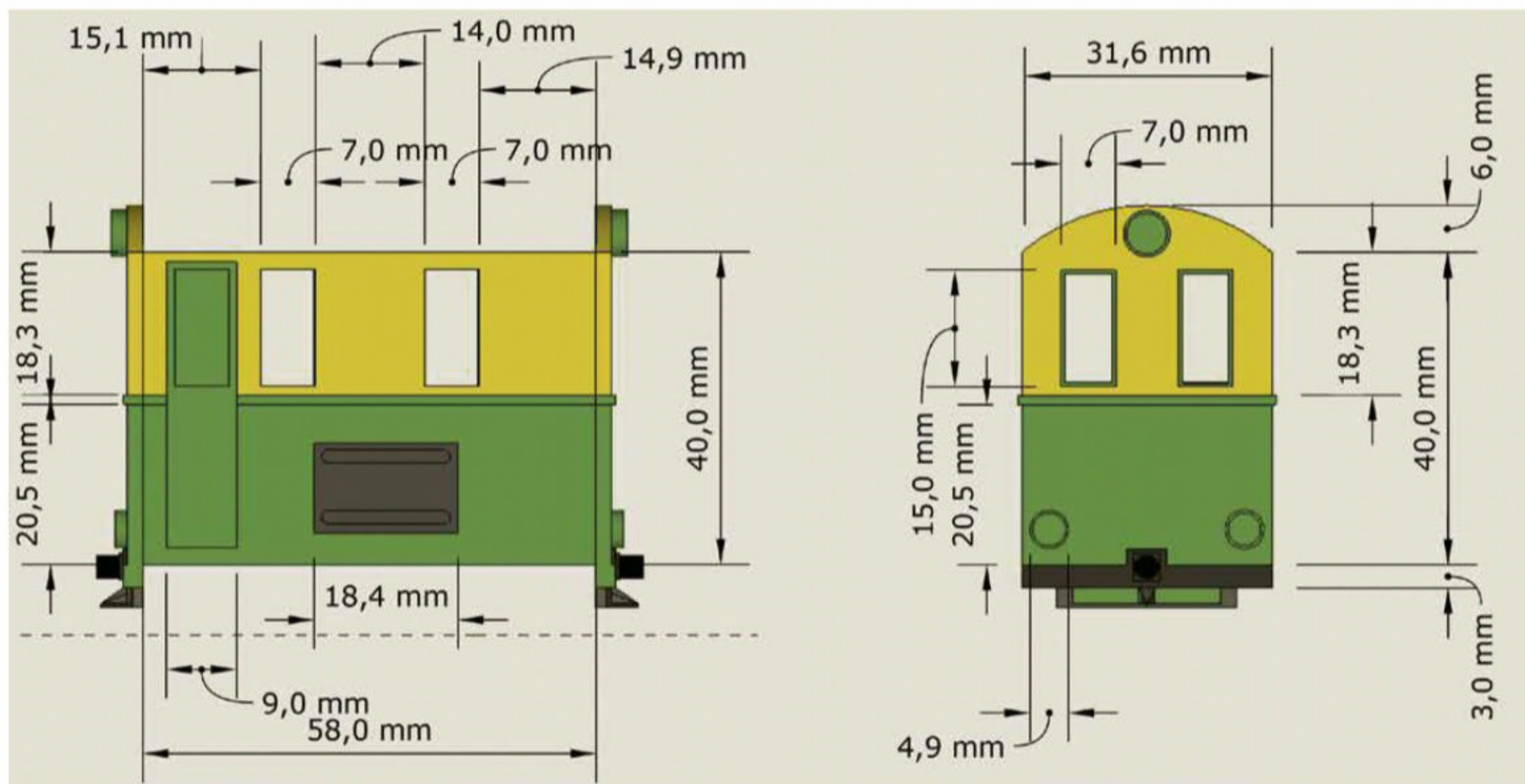
9 Printing takes place flat on the machine's plate. I use the function designed to create edges around the parts, to ensure their corners do not bend upwards during the printing process, making them totally useless **(to the right on the photo)**!



10 The parts are given a coat of primer from an aerosol can. Each part is lightly sanded to remove the printing ridges as best as possible.



11 The parts are assembled around the small chassis. Inspired by a rack locomotive of the Nuria railway, this little machine will be very pleasing!



Locotractor plan.



In the late evening, the 3D electric locomotive rumbles across a bridge over a suburban street.



**SUNDAY
JOB**

A delightful steam railcar, ideal for providing a fast and comfortable service!

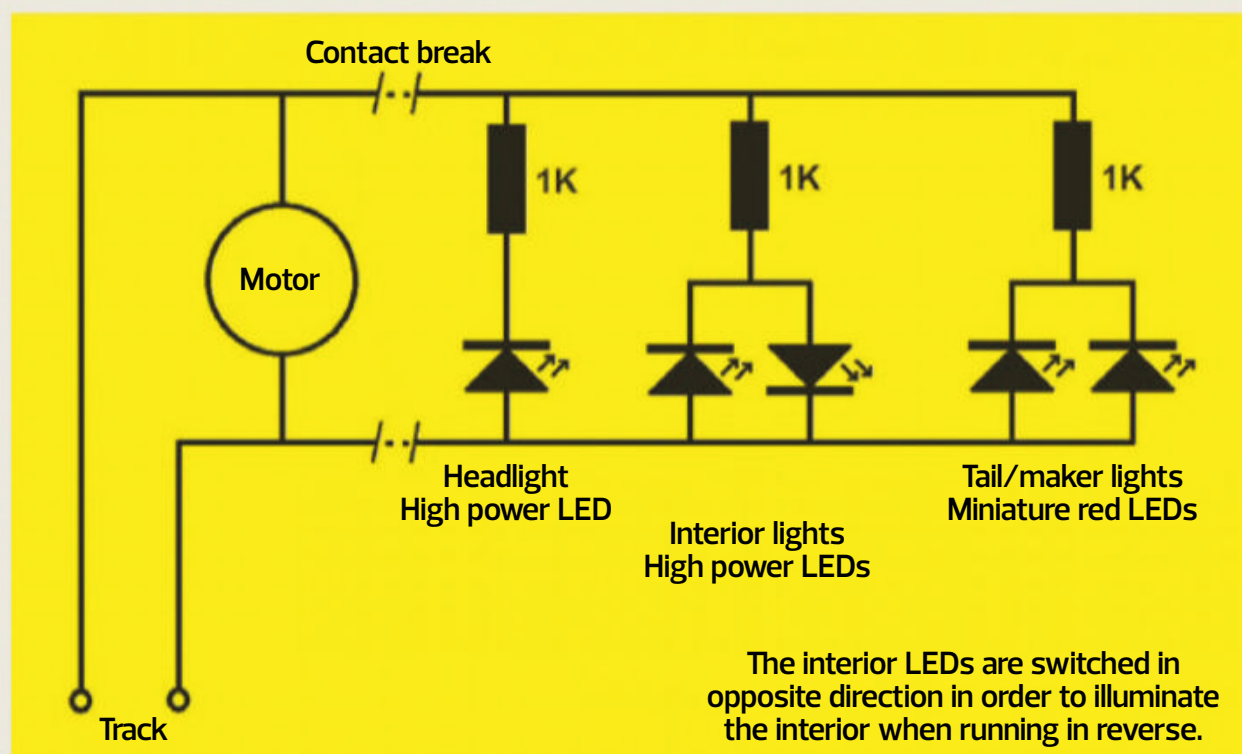
A steam railcar built WITH A SCALPEL

Ted Polet is a super-modeller who has been successfully practicing OO-9/HO-9 for many years. Around this scale, he has developed a very personal universe. He shows us how to build a steam railcar, in no time at all!

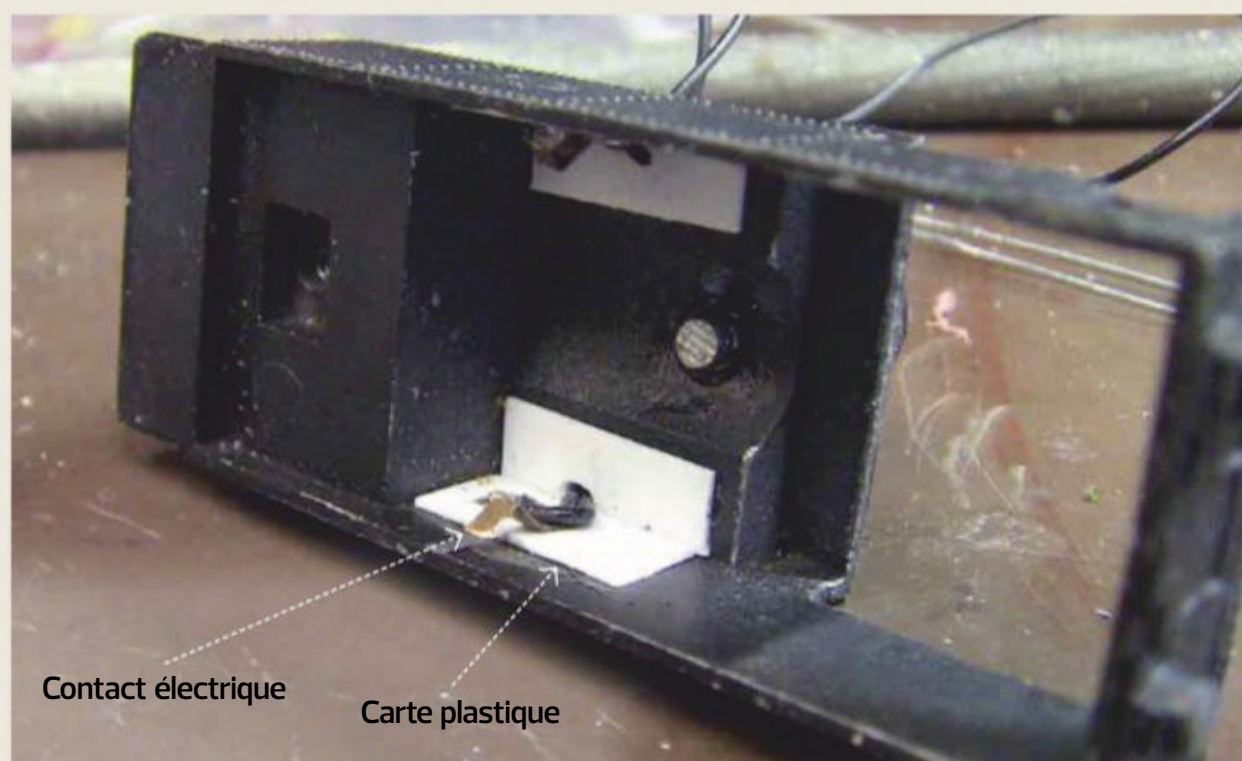
Text: François Fontana
Photos: Ted Polet

When we met Ted Polet in Walferdange on 10th and 11th November 2018, with his small "Nixnie"

exhibition layout, he was running a delightful scratchbuilt steam railcar. His model was derived from an inspection vehicle that ran in the 1870s on the standard gauge network in Chili. A fine example of a home-made creation, which he agreed to describe to us in 9 steps, and which we expect will inspire many among the modelling community. So, sharpen your scalpels, prepare your tools, heat up the glue and enjoy the project! ■



1 Arranged on the workbench, here are the various components: the small N scale Fleischmann 0-4-0 T ref. 7000. A few white metal parts, steam dome and funnel from the former Chivers Fineline range. A Mantua half-carriage in H0, the other half having been used to build the railcar visible in the background.



2 The body of the Fleischmann locomotive is modified: the cab is trimmed, the sandbox and funnel are sliced off. The original steam dome is preserved, it will become the sandbox and be fitted with a bell! Inside the cab, I fitted two bronze electrical contacts that rest upon the contact strips of the Fleischmann driving chassis. They are insulated from the metal body by thin plastic sheet, and the assembly held in place with instant adhesive.

Motive power

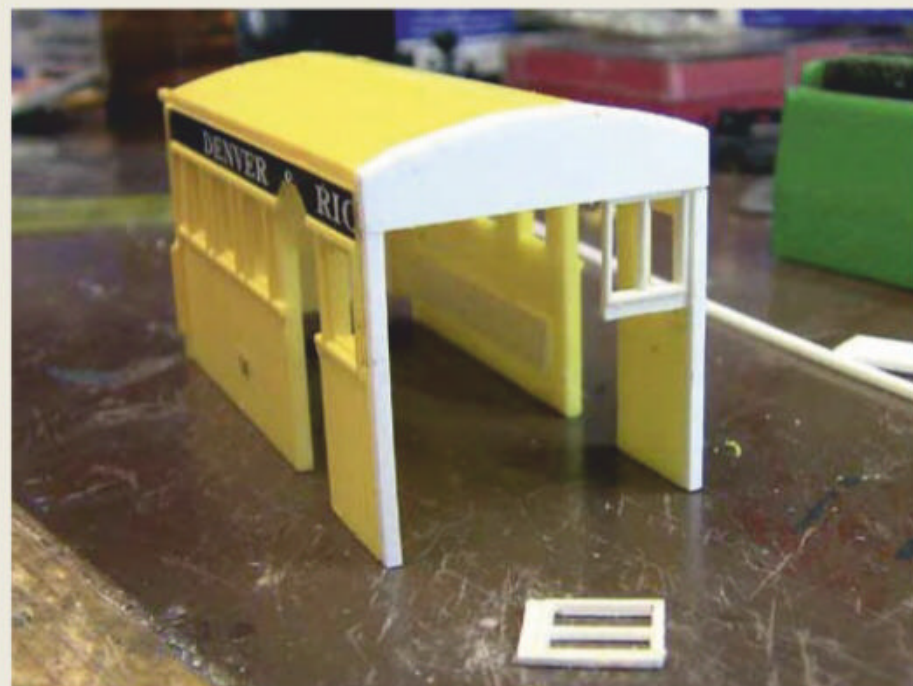


*The steam pipes
are the wires
to camouflag!*

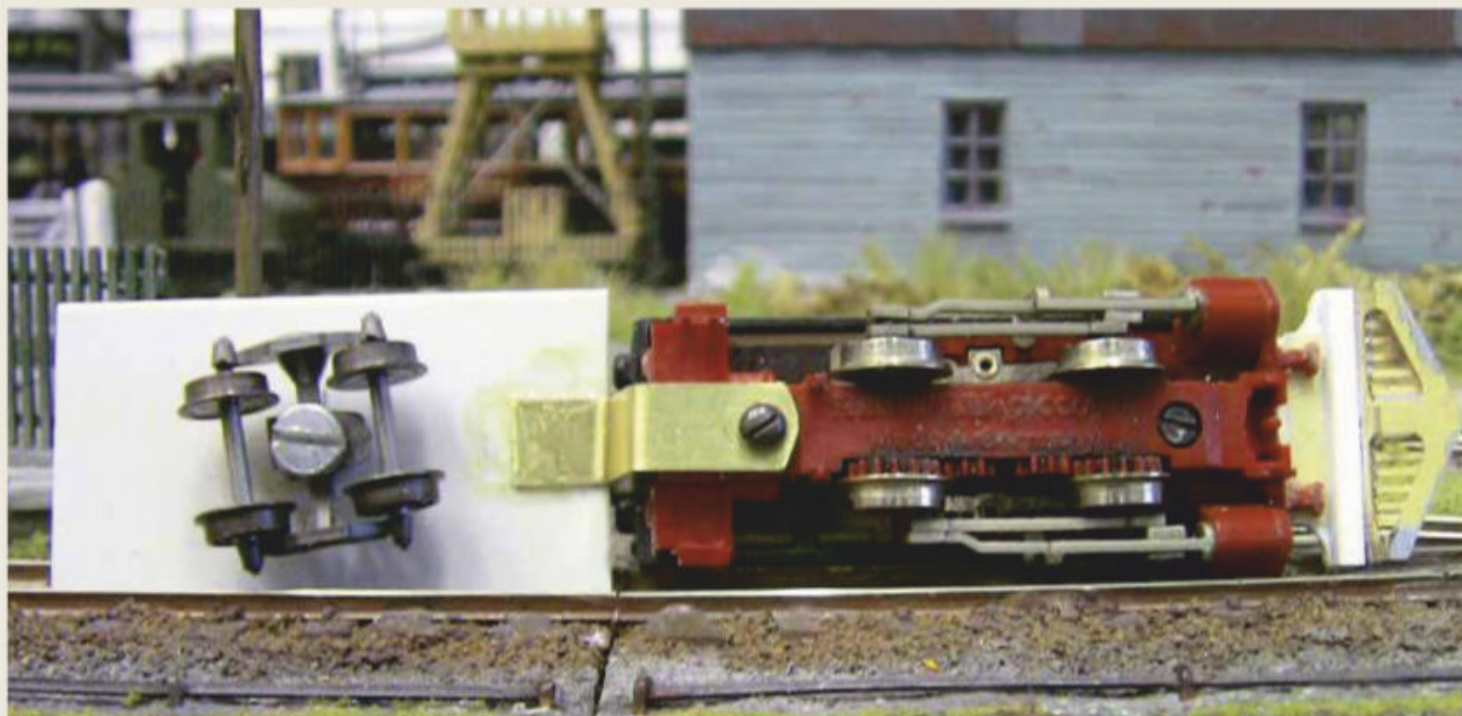
3 The electric wires, far too big to be concealed in the locomotive body, unless it is the opposite, and that the body is too small! The wires, therefore, are camouflaged as steam pipes running along the boiler. Running from the pick-up board, they feed the front LED via a resistor that is concealed in the cab. Once the wires have been soldered and glued in place, they are simply painted black.



4 The body, fitted to the chassis, is then placed on the track to test the front lamp. The lamp only works when the engine is running forwards. The cow-catcher is from the Langley range.



5 The Mantua half-carriage is cut lengthways: a ca. 6mm wide strip is removed so that its width is better suited to narrow gauge. Check against the driving chassis and adapt the dimensions to the clearances you have on your layout. The front panel is rebuilt out of plastic sheet. The small apertures will simply fit over the body of the locomotive.



6 A major technical undertaking, the chassis of the carriage: a rectangle of plastic sheet is held in place under the locomotive chassis by a simple screw! It's hard to keep it simpler... The towbar is cut out a recycled strip of brass, glued under the plastic sheet rectangle. The assembly allows for some side play to help running through curves. The carriage is supported by a N scale bogie.



7 The ends of the carriage are rebuilt out of plastic sheet. The floor is supported by two strips of plastic sheet glued under the body.

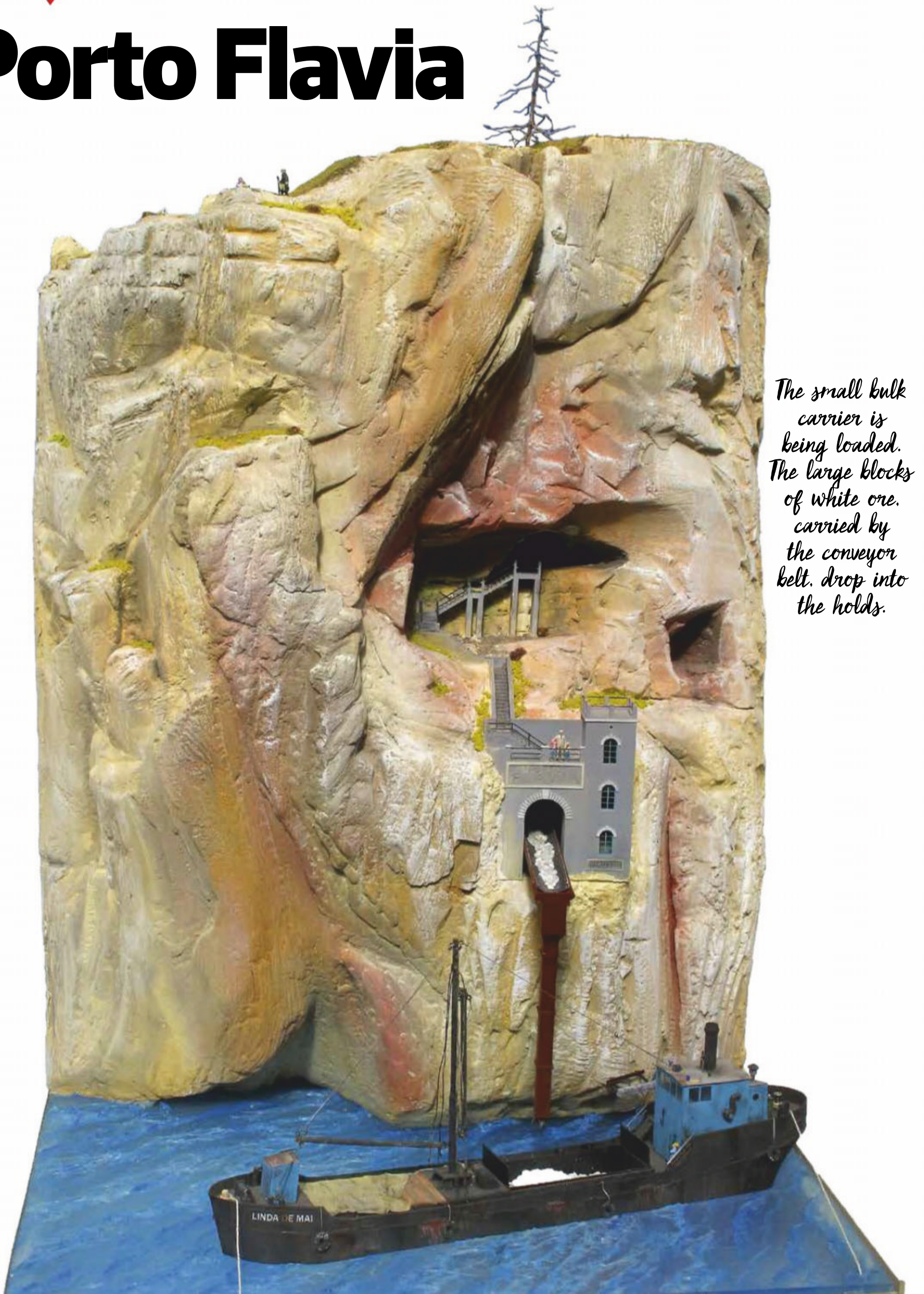


8 Two park benches act as inside seats. Two figures are installed on the rear platform; note the brake wheel! Under the roof, you can see the circuit board which carries the two diodes for the inside lighting with their resistor, together with the mini-diodes for the rear red lights.



9 A few white metal figures, a fine headlamp, a whistle, a valve and a fine red livery complete the picture.

Porto Flavia



The small bulk carrier is being loaded. The large blocks of white ore, carried by the conveyor belt, drop into the holds.

Here is a slightly crazy project: from a historical point of view, certainly; but also from a modelling point of view. Here is the story in 1/87 scale of a major industrial site.

Text and illustrations: **François Fontana**

The layout at a glance

Scale: H0-9

Dimensions: 158 x 55cm,
height 86cm

Control: analogue

Track: Peco

Inspiration: the real site
of Porto Flavia in Sardinia

It was Sunday evening at the Junglinster show in Luxembourg, and the event was drawing to a close. Pitt, the local master of ceremonies, came round to see us. We were displaying a layout: Riffelalp 2222. We, meaning François, François, François and Matthieu; the only one, according to the other three, to have an alien first name. Pitt had a simple question for us:

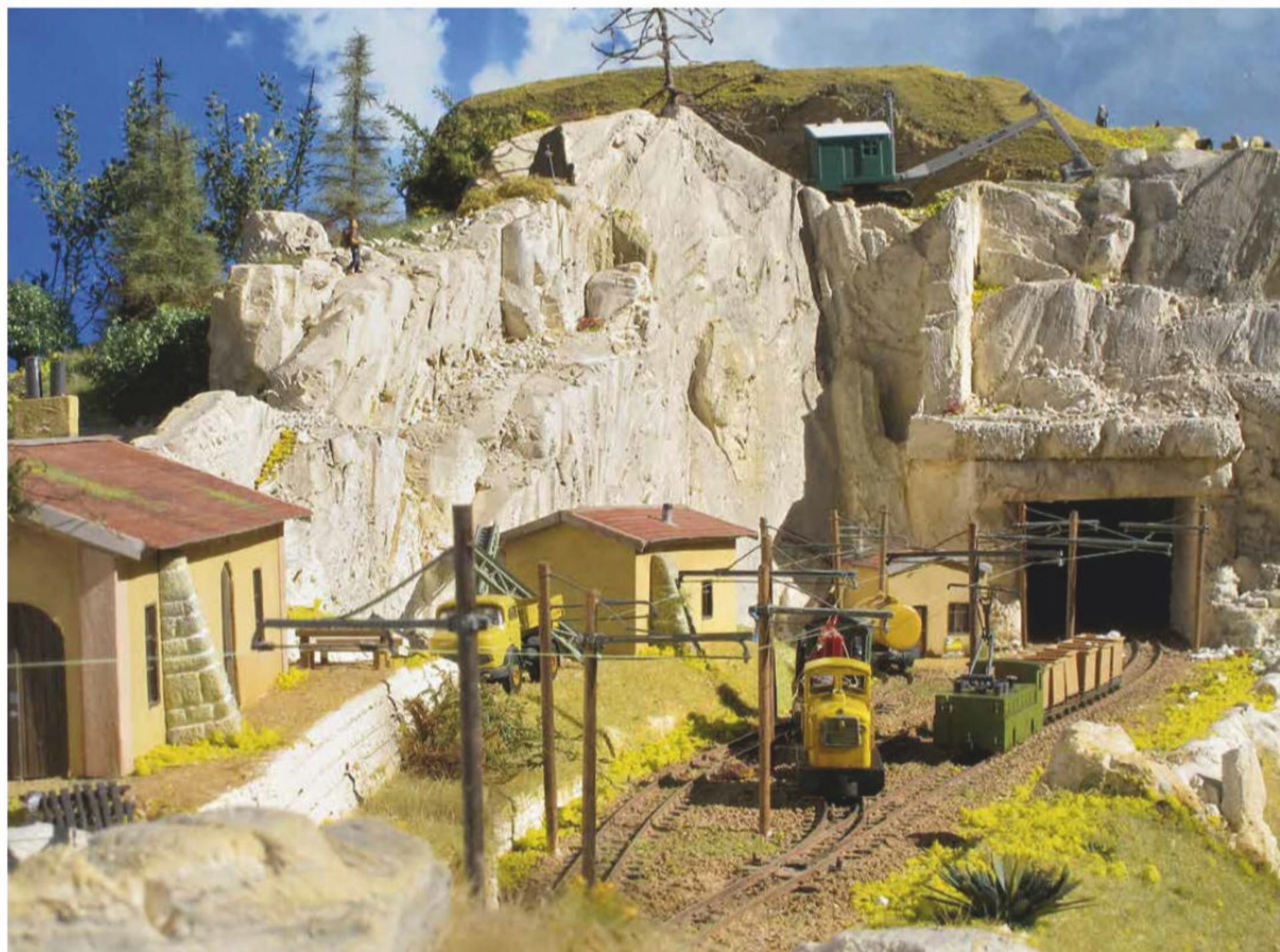
— What will you be showing next year?

— A super layout! was the unanimous answer. But for the time being, it's still a secret...

The idea had been mentioned a few years earlier while having a round of drinks. It then popped up again in our minds several times. That evening, it became obvious. Porto Flavia had to come out of our heads and become real in 1/87 scale.

What is Porto Flavia?

Porto Flavia is a harbour. A mineral harbour, from where the underground riches of Sardinia were shipped to mainland Italy. In this south-western part of Sardinia, there was no inlet, creek or bay deep enough to accommodate large vessels. The wide range of minerals mined locally from the rich sub-soil were loaded into wicker baskets and transshipped from the ■■■



Emerging from the mine, a string of full skips makes its way to the harbour.

H0-9 Layout

... coast to the ocean-going vessels on small sailing boats, which shuttled to and from between the beach and deeper waters. It took more than 20 days to load a single bulk carrier using this system. Work was tedious and worse, productivity was abysmal. As Italian industry in the 1920s needed those minerals, digging a proper harbour was imperative. Cesare Vecelli was the brilliant engineer who devised a fantastic idea: he dug a harbour out of the cliff. Vessels would drop anchor in deep waters off this cliff and would be loaded directly by a conveyor belt. He developed his concept further, digging 7 separate silos, one for each type of ore, all fed by an inside electrified 60cm gauge railway, running directly from the quarries. Inaugurated in 1924, the harbour operated for ca. 60 years before becoming an important industrial heritage site. The monumental portal is the only visible sign of this huge underground cathedral dedicated to industry. Flavia was the name of Cesare's daughter; a tribute from a devoted father!

The model

We decided to evoke this fantastic site by modelling on one side the cliff, the monumental harbour portal and a bulk carrier being loaded. On one of the long

sides, the railway portal, on the opposite long side, an ore quarry. And between the two, a section of line. The layout can therefore be viewed from all four sides. Our only constraint was to accurately preserve the proportions of the structure: the altitudes are in 1/100 scale, while the portal is in 1/90 scale. The conveyor belt emerges 18cm above the water, while the railway is 18cm higher. We endeavoured to model the cliff volumes as accurately as possible. For obvious reasons of space, we chose a small vessel, but Porto Flavia could accommodate much larger bulk carriers. The railway entrance portal was accurately modelled, we drew it using photographs with only one known dimension, but

Quarry site



55 cm

Harbour and cliff site

Layout plan

128 cm

rules of three are there to help! On the other sides of the layout, we built sites that we found spectacular, such as this stretch where the track hugs the cliff side, supported by rails embedded vertically in the rock. Finally, the entrance to the mine and the quarry are a careful blend of what we could find in our documentation.

The layout

The trackplan is simple, it was designed for operating the layout in public. The ore-laden trains leave the quarry and enter the harbour, before re-emerging empty and returning to the quarry. Inside the cliff and in the quarry, a passing loop enables a full train to pass an empty one. The railway's real



Assembling the layout on the eve of the Junglinster show in March 2017. François, François, François and Matthieu.

route ran from the quarries and mines to the harbour, the latter being designed as a balloon loop. We modified this arrangement by creating a continuous track plan, locating the mine and quarry directly behind the cliff. Full trains run round in one direction, empty one in the other!

The turnouts are operated by Blue Point devices and by rods concealed in the bushes on the hill located in the foreground of the quarry.

Animation

When the full trains enter the harbour, they stop on the passing loop. The conveyor belt, an old Faller model, carries the blocks of ore to the ship. On the prototype, a tarpaulin fixed to the discharge chute prevented dust and smaller pieces of ore from falling outside the holds. We opted not to model this tarpaulin so that viewers could see the ore falling into the ship's hold. On the other hand, we carefully modelled, using 3D printing, the metal webbing that supports the conveyor belt and the discharge chute. In the harbour fiddleyard, we use a plastic funnel to load the ore onto the conveyor

belt; the ship's hold is removable and we empty it regularly as soon as viewers drift away from the layout. Working regularly, it takes us a couple of hours to fill the hold!

Construction

The monumental portal is 3D printed. It is one single block. The small staircases leading to the track level are also 3D

printed. For the railway portal, we opted for laser-cut coloured cardboard. The cliff is entirely sculpted out of a block of polyurethane insulation foam. Once the volumes are modelled, they are coated with Gesso then painted and weathered. All the rocks on the layout are cut out of Styrofoam, coated in Gesso, painted and weathered. The buildings at the ■■■



The Valente electric engines are 3D printed, from the Jelly Models range, fitted to Kato driving chassis. The skips are also 3D printed.



The breakdown train is parked next to the workers' accommodation.



A good two hours are required to load the ship. At the real harbour, 24 hours were needed to empty a silo into the holds of a bulk carrier.

■■■ mining site are made of plastic sheet, with Redutex roofing sheets. The lineside overhead wire poles are from the Sommerfeldt range; inside the quarry, they are scratchbuilt with metal consoles fixed onto wooden poles. The Z-Mate overhead wire is glued to each insulator, while the pantographs of the locomotives are held 1mm below the overhead wire. The typical skips consist of 3D printed bodies fitted to MiniTrains truck chassis. The electric locomotives are from the Jelly Models range, Valente engines to which a pantograph has been added. The locomotive roster also includes a diesel unit, which is in charge of the breakdown train. Two toast-rack carriages are parked ■■■



An train seen leaving the harbour.



In the fiddleyard, a simple plastic funnel is used to load the conveyor belt.



One of the most spectacular stretches. The track is simply supported by rails driven vertically into the cliff.

H0-9 Layout

■■■ on a siding, they evoke the tourist operations of today and naturally, they never knew the lining operations!

The method

The four of us live in the Rhône-Alpes and Eastern regions of France. Therefore, we designed and built the layout by correspondence, with final assembly taking place just two days before the layout was first shown to the public. We must admit that some finishing touches have been added since. The layout will be on show at Meursault on 7th and 8th December. Cesare and Flavia are expecting you on the terrace of the monumental portal, come and meet them! ■

The brand new set of toast-rack carriages is waiting for the first visitors to the heritage site.



When on display, the layout is fitted with a pelmet that conceals the lighting system.



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chemin de fer à crémaillère **H0n3z** Ferro Train

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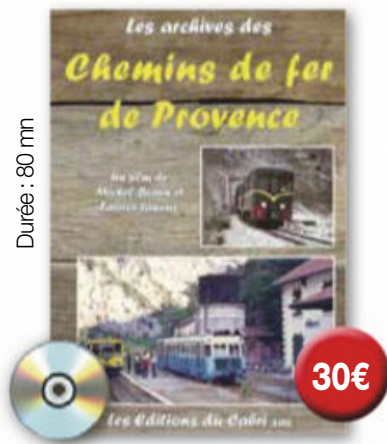
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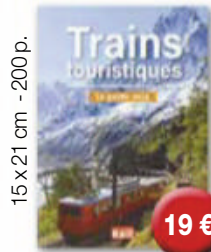
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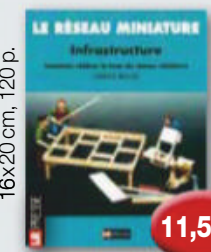
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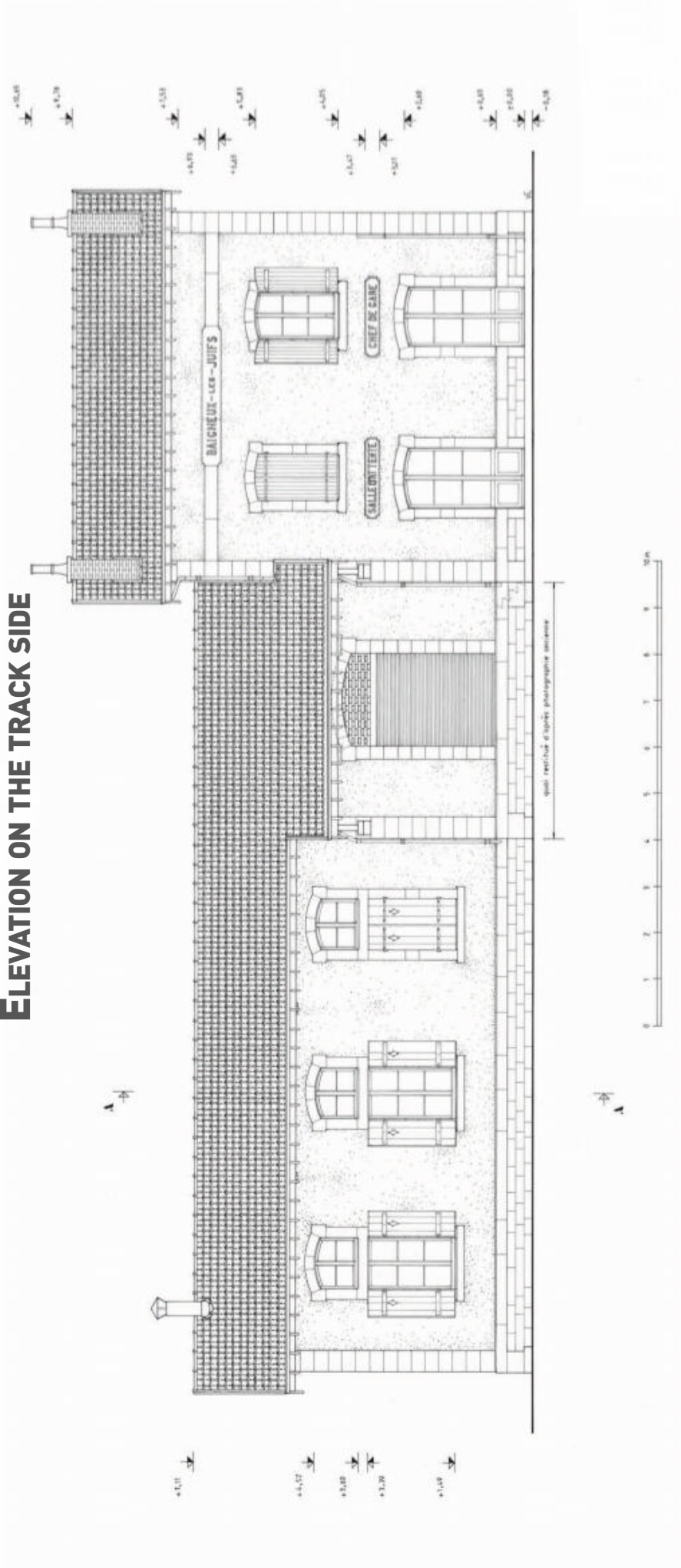
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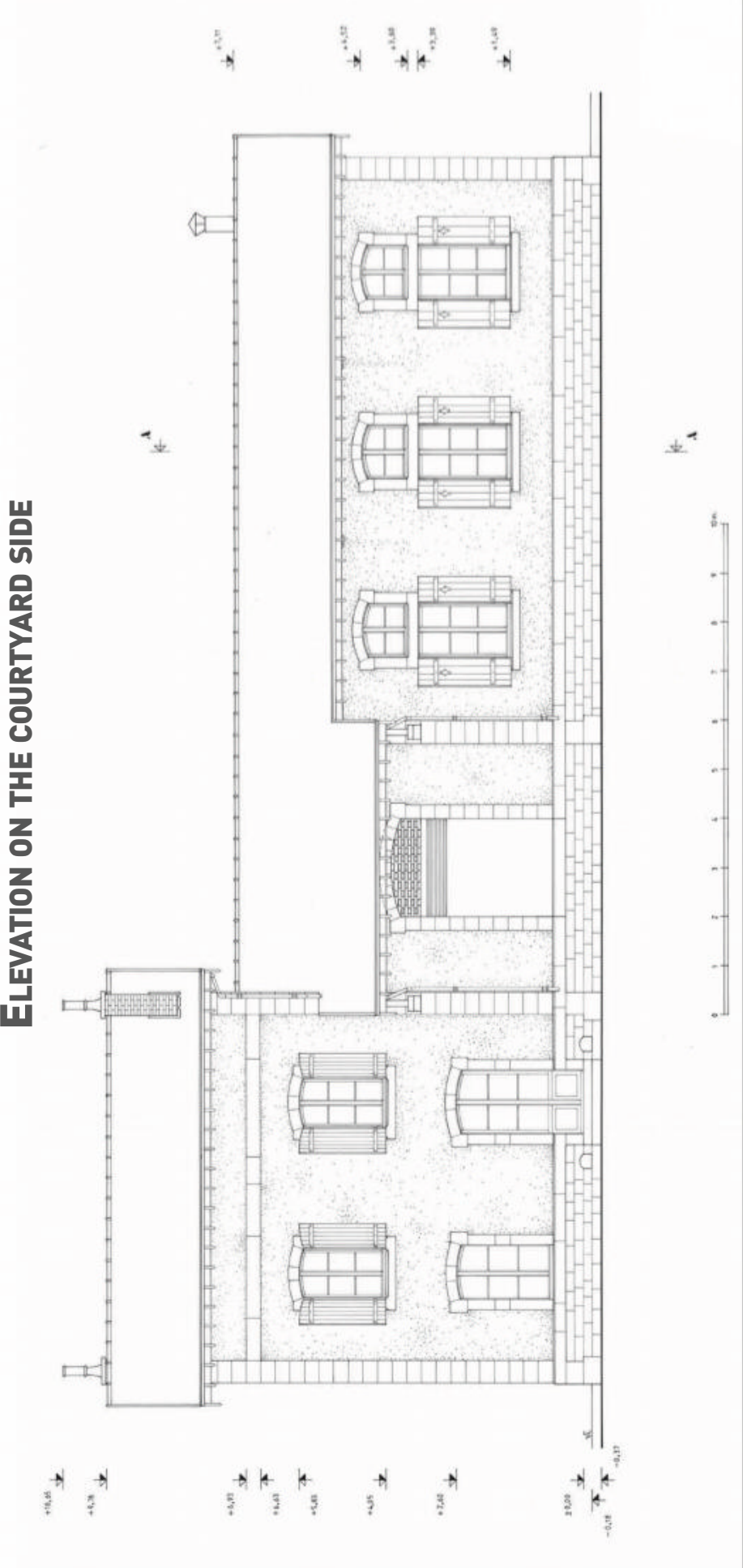
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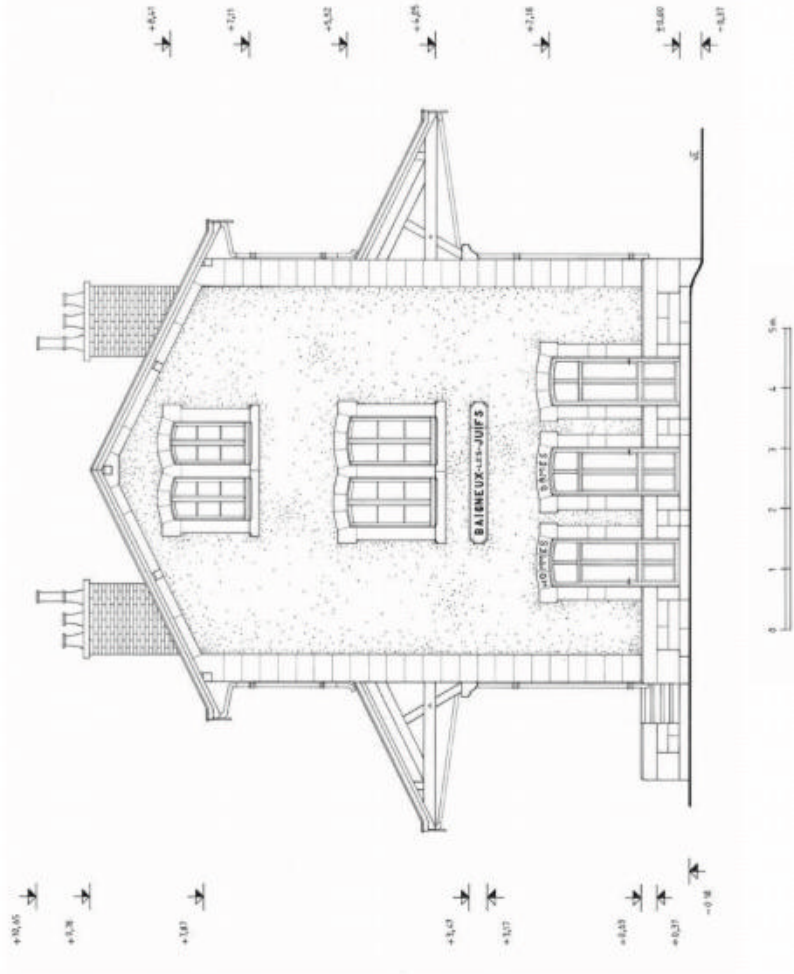
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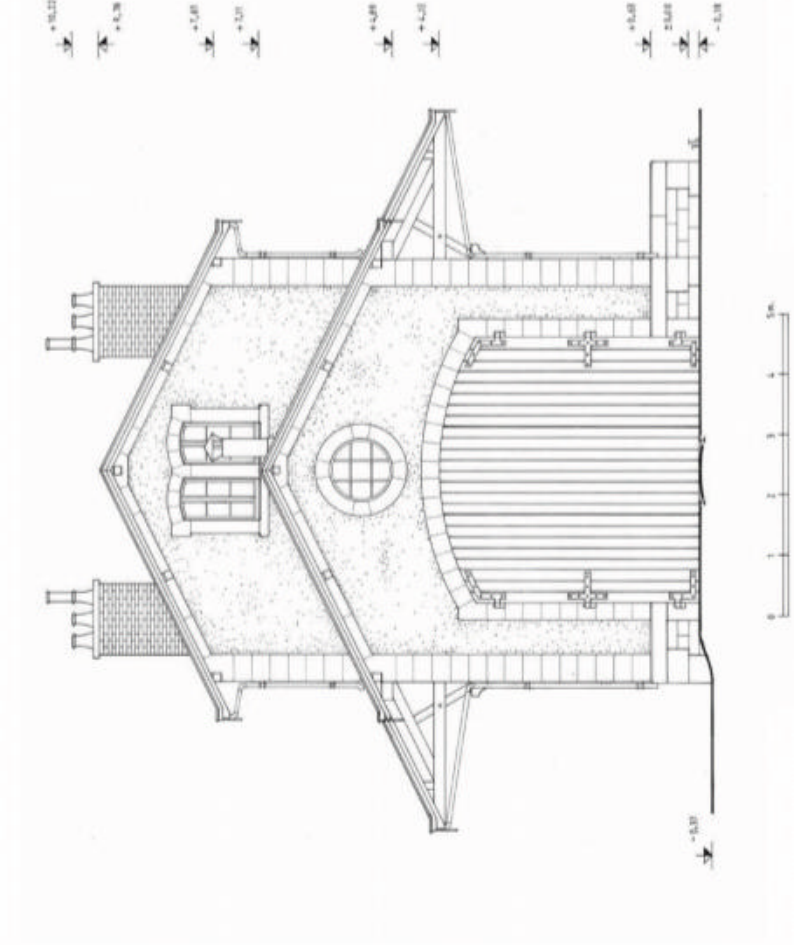
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