

*The French Trains Set*

+

*The French Rails Set*

*Testing version 1:  
Narrow Gauge Railways, Preliminary Version*

© 2005 – 2012, by Jacopo Coletto (aka Snail)

## Index

0. Overview . . . . .	2
0.1. The Set itself . . . . .	2
0.2. System requirements . . . . .	2
1. Getting started: narrow gauge railways in France . . . . .	2
1.1. A cheaper way of transport . . . . .	2
1.2. The golden age . . . . .	3
1.3. The decline . . . . .	3
1.4. Exceptions and rebirth . . . . .	3
2. The contents of the Set . . . . .	4
2.1. Featured historical companies. . . . .	4
2.2. The rolling stock: motorized vehicles . . . . .	7
2.3. The rolling stock: coaches and wagons . . . . .	16
3. The dynamics of the Set . . . . .	19
3.1. Choosing a livery for a consist. . . . .	19
3.2. Multiple traction . . . . .	24
3.3. Push-pull trains . . . . .	25
3.3. A special case: the Z200 EMU . . . . .	27
4. The French Rails Set. . . . .	28
4.1. Overview . . . . .	28
4.2. Rackrail tracks . . . . .	29
4.3. Other track sets . . . . .	29
4.4. For the developers . . . . .	29
5. Playability notes . . . . .	29
5.1. Compatibility with other train sets . . . . .	29
5.2. Suggestions about how to play with the Set . . . . .	30
6. The playtesting phase: what to watch for . . . . .	31
6.1. What's there. . . . .	31
6.2. What's lacking . . . . .	31
6.3. What to watch for . . . . .	31
7. Acknowledgments . . . . .	32
8. Copyright notes . . . . .	32
9. FAQ. . . . .	33

## 0. Overview

### 0.1. The Set itself

The Narrow Gauge French Set is a trainset developed for OpenTTD and TTDPatch. It features meter-gauge trains from the most prominent railway networks of the country, and intends to provide a cheap alternative to standard gauge rail transport over short to medium distances across various geographical conditions (from flat land to mountainous areas).

It is designed to fit best with the forthcoming French Set (currently under development), which will include the most important rolling stock from SNCF and other companies that historically operate, or operated in the past, across France.

This set models the actual development of French secondary railway. It provides vehicles from 1880 to the present day, with the widest range being concentrated between 1910 and 1950, the year around which most secondary networks were closed.

### 0.2. System requirements

Presently, the TTDPatch version of the Set is not available yet.

The OpenTTD version requires the most recent trunk version of OpenTTD (r23771 or above), or OpenTTD 1.2.0-beta1.

For the push-pull feature to work correctly, OpenTTD r24371 or above is required.

## 1. Getting started: narrow gauge railways in France

Before we get deeper into the set's characteristics, it is useful to take a step back and outline a brief historical description what the Set attempts to recreate.

### 1.1. A cheaper way of transport

In the second half of the XIX century, the need to connect remote areas not reached by the existing railways was felt as a more and more compelling issue. Narrow-gauge railways often provided the optimal solution: their lower cost and greater flexibility, given by the shorter minimum curve radius, were the main advantages. In most cases, metric gauge was chosen.

Soon, more or less expanded networks of these lines started popping up a bit everywhere around the country. Some were rural lines, connecting small villages around flat or mildly hilly area; others were mountain lines, characterized by massive bridges and tunnels that little had to envy to those found on standard gauge main lines; others, instead, looked more like tramway lines, partly running across the towns' main streets.

Each company had their own unique rolling stock, although a few standard locomotive designs began to be widespread across multiple railway networks. The used types ranged from small tramway-like twincab steamers, cheap to run and easy to service, to the elegant Ten-Wheelers capable of running at high speeds across the plains, as well as the massive Mallet types that could pull heavy freight trains across winding mountain lines. A few mountain networks started experimenting electric traction, in some cases even earlier than their larger standard gauge siblings; to power those pioneering locomotives, third rail and catenary were tested, both with encouraging results. A few rackrail lines were also used when the steep would not allow simple adhesion locomotives to be effective.

## 1.2. *The golden age*

Around the turn of the century, this system was already consolidated and became crucial for the economy of the country. A few narrow gauge networks had become so large that they would encompass multiple regions, with as much as 500 km of track, and would service important cities such as Lyon, Grenoble, and Nice. Some of them shared the same stations with the main standard gauge lines, and in a few cases double gauge was installed, so that both standard and narrow gauge trains could share the same tracks.

As the technology advanced, the first gasoline- and diesel-powered vehicles became available, slowly but steadily replacing steamers on the shortest, most flat rural lines, to cut running costs down. The first attempts looked very much like buses running on rails, which soon gave way to larger units designed specifically for a railroading purpose. This gave those networks a real chance against the increasing automobile traffic. Those railcars, soon to be joined by diesel multiple units, were painted in bright liveries that replaced the dark colors chosen for steamers and early coaches. Soon, steamers would be relegated to freight service only, which was important as well, and would haul basic materials such as coal from the mines, fresh produces from the countryside to the cities, or fish from the seaports, using special refrigerated wagons.

With the advent of tourism, there were first *bains de mer* trains on the coastal networks, hauling bathers to the beaches of the Atlantic and the Mediterranean in the summer.

## 1.3. *The decline*

The occupation of France and the war of Resistance fought during WW2 saw the railway playing an important role, and narrow gauge networks were no exception to this rule. It was not infrequent that pieces of infrastructure, especially bridges, were damaged during war actions, and the rolling stock also suffered from damages or destructions. After the war, some networks were found in a very poor state and would need a thorough work of reconstruction, had the idea been to put them back in shape.

However, the always-rising automobile traffic made those railways appear too costly to maintain, as well as redundant. Passenger volume was sharply declining; the aging steamers needed to be replaced by new, more efficient engines; and even freight traffic, once very important, started to drop, affected by the competition of road trucks.

As a result, the Fifties and the Sixties saw the demise of many of those railways, not only unprofitable to run, but also outdated, like a remote vestige of a past that France, together with post-war Western Europe, wanted to soon put behind, driven as it was by the technological and social progress of those years. With few exceptions, narrow gauge networks closed down one by one, sometimes after a long series of closures limited to single branches. The tracks were removed and the station buildings were sold to the municipalities.

## 1.4. *Exceptions and rebirth*

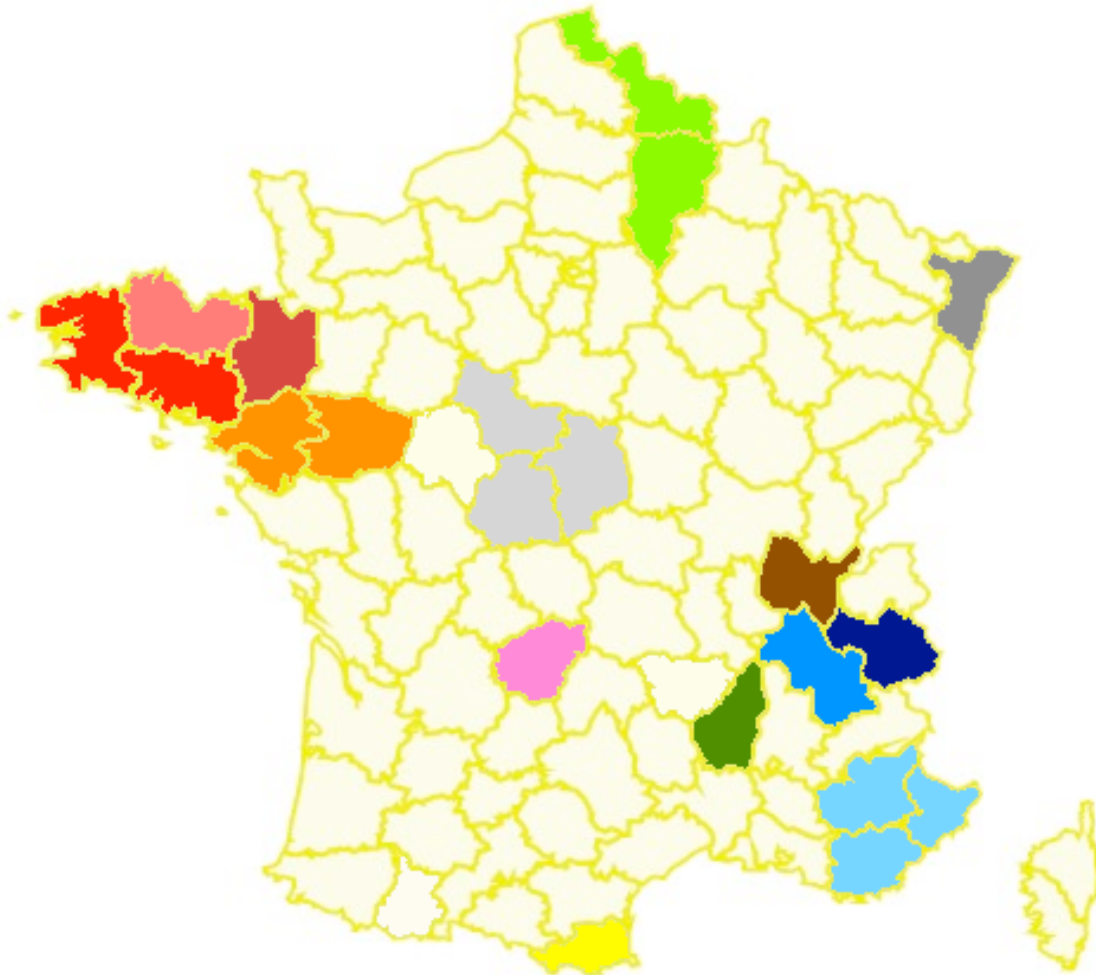
Among the lines that escaped this fate were the Corsican one, which was the only railway network in the island; the few electric mountain lines, still profitable due to electric traction and less competition because of their geographical locations; and a handful of networks scattered here and there across the country, where modern, cheaper railcars helped keeping costs down to a minimum. A few new diesel multiple units were designed and built for those networks across the years. In the present days, those networks are still active, and haul passengers in regular service, using trains that share many technological solutions with their standard gauge siblings.

Most of the original rolling stock was demolished or sold abroad as soon as the various networks were closed. However, a small number of old locomotives went through the years more or less untouched, and is now being used as a touristic attraction on the few surviving metric-gauge networks. This makes it still possible to experience a faint glimmer of the atmosphere coming from the roaring years of narrow gauge railroading in the country.

## 2. The contents of the Set

### 2.1. Featured historical companies

This set models a selection of the many metric-gauge networks across the country. Those chosen for the set can be found in the highlighted areas of this map and on the summary tables:



Area	Company	Year opened	Year closed	Headquarters, major cities served	Typical rolling stock
North-West	Réseau Breton	1891	1967	Carhaix	Large steamers (Mallets, 230T)
	Côtes du Nord	1905	1956	Saint-Brieuc	030T steamers; De Dion railcars
	Twys de l'Ille et Vilaine	1897	1950	Rennes	030T steamers,
	Petit Anjou	1893	1948	Nantes	030T steamers; early railcars
Center	Blanc-Argent	1901	S. a.	Romorantin	Verney railcars from the 1950s
	PO-Corrèze	1904	1969	Tulle	Mallet steamers; large diesels
	Twys de Corrèze	1904	1960	Tulle	030T steamers
North-East	Cambrésis	1880	1960	Cambrai	030T, 141T steamers
	Alsace-Lorraine	1883	1938 *	Colmar	Early 040T steamers
South-East	Vivarais	1891	S. a.	Lamastre	Mallet steamers; Billard railbuses
	Provence	1876	S. a.	Nice; Toulon	Many generations of railcars, from early Renaults to modern ones.
	La Mure	1888	S. a.	La Mure	Large electric engines
	PLM	1901	1938 *	St-Gervais; Chamonix	3rd rail EMUs
	Tramways de l'Isère	1897	1938	Lyon	Twincab 030T steamers
	Tramways de l'Ain	1879	1954	Bourg-en-Bresse	030T steamers,
South-West	Ligne de Cerdagne	1910	S. a.	Villefranche-de-Conflent	3rd rail EMUs
Corsica	Chemins de fer Corses	1888	S. a.	Bastia; Ajaccio; Calvi	Large diesels; railcars of many eras

Area	Company	Locomotives' liveries	Coaches' liveries	Railcars' liveries
North-West	Réseau Breton	Black and dark green	Brown	Cream-red
	Côtes du Nord	Red	Green	Dark green, then red
	Twys de l'Ille et Vilaine	Green	Green	
	Petit Anjou	Black	Green	Cream-red
Center	Blanc-Argent	Black	Green	Cream-red, then white-blue
	PO-Corrèze	Black and dark green	Brown or green	
	Twys de Corrèze	Black and dark green	Brick red	
North-East	Cambrésis	Green	Green	
	Alsace-Lorraine	Olive green	Olive green	
	Vivaraïs	Black	Dark green	Grey-red, then cream-red
South-East	Provence	Black-red steamers; cream-brown diesels	Black/red, then white/blue	White-blue or cream-brown; yellow; white-red; white-blue
	La Mure	Black steamers, green electrics	Different across classes, then green	
	PLM			Brown; white-blue; cream-red; orange-white; red-white
	Tramways de l'Isère	Green	Green	
	Tramways de l'Ain	Grey	Brown	Cream-blue
	Ligne de Cerdagne			Deep yellow, then yellow/red
South-West				Grey-red; cream-red; white-red; white-blue
Corsica	Chemins de fer Corses	Black steamers; many liveries for diesels	Green	

“S. a.” in the table means a “still active” railway. (The map source is available at <http://www.france-travel-secrets.com/blank-map-of-france.html>; and was modified to highlight the relevant departments).

The historical companies recreated by the Set are the following, divided by regions:

#### *The North-West*

- With its 426 km of track, the *Réseau Breton* was one of the largest metric-gauge networks in the country. It was opened in 1891 and its fast locomotives hauling long, bogie-mounted carriages over flat and mildly hilly areas were unique to this network. It also had an important freight traffic. On the map, it operated in the four departments highlighted in red (all shades: light, medium and dark). It was closed in 1967.
- The *Côtes du Nord* was another large network, about as large as the *Réseau Breton*, but opened later (in 1905). It's named after the department it's active in, the light red area on the map. Its trains, together with the *Réseau Breton*'s, were among the first to carry tourists to the seaside towns across Brittany. The *Côtes du Nord* network was closed in 1956.
- The *Petit Anjou*, a somewhat smaller network started in 1893 and closed in 1948. It operated in the Loire-Atlantique and Marne-et-Loire departments (orange area).

#### *The Center*

- The *Blanc-Argent* network, active in the departments of Indre, Cher and Loir-et-Cher (silver area on the map). The first branch was opened in 1901, and one small branch survives until our days. This network was one of the first ones to receive modern, fast diesel railcars in 1950, built using standard gauge-derived technology.
- The *Paris-Orléans* (PO) company was managing a nationwide standard gauge network, and therefore was a large player in the French railroading universe. It also operated a small narrow gauge network, called *Chemins de fer de Corrèze*, or simply *PO-Corrèze*, between 1904 and 1969. Its characteristic engines were the 020-020T "Mallet" used to haul any type of cargo. It was located in the Corrèze area (pink on the map).
- Located in the same region, the *Tramways de la Corrèze* also opened in 1904, as a smaller, more local-focused railway network. It eventually fell under control of the PO-Corrèze.

### *The North-East*

- First opened in 1881, the *Chemins de fer du Cambrésis* was one of the first local tramway-like network in the country. It was active in the *Nord* and *Aisne* departments (light green area on the map). Although its size was only moderate (120 km of rails), it was one of the very few to receive large post-WW2 steamers. The last branch of the network was closed down in 1960.
- The *Elsass-Lotrbringen* network (renamed Alsace-Lorraine after WW1) was one of the main standard gauge networks in the country. However, it also exploited a small narrow gauge section, with rather interesting steamers. It operated in Alsace (dark grey area on the map).

### *The South-East*

- The *Vivaraïs* is another rather large network operating in southern France. It was opened in 1891 and, due to the winding nature of its track, featured mostly Mallet engines. Some of them were the mighty Swiss-made 030-030T for service on steep lines. It is one of the few surviving networks in the country. It's located in Ardèche (dark green on the map).
- The *Chemins de fer de Provence* is another railway company that's active today. It used to have a very large network, with its 879 km in 1910, of which only a small part survives now. It featured innovative railcars from the mid 1930's; today, it boasts the most modern narrow gauge rolling stock across the country. It's active in the Alpes-Maritimes, Var, and Alpes-et-Haute-Provence departments (light blue area).
- The *Chemins de fer de La Mure*, also called SGLM, is a mountain railroad constructed to haul coal from the southeastern mines on the Alps; it now operates as a touristic railroad. It opened in 1888, with steamers specifically designed for mountain lines, and was electrified in 1906. Some of its electric engines are still in use today. It's located in the Isère department (mid-tone blue area on the map).
- The *Paris-Lyon-Méditerranée* (PLM), one of the largest players in France, built in 1901 a steep mountain line to connect a few towns around the Mont-Blanc region. The initial rolling stock featured third-rail powered EMUs where all the wagons lied on powered trucks, to increase tractive effort. The line is still active today, exploited with modern rolling stock. It's located in the Haute-Savoie department (deep blue color), and reaches the Swiss town of Martigny.

### *The South-West*

- The *Compagnie du Midi*, another major railroad player known for its standard gauge lines, opened in 1910 an interesting mountain line: the *Ligne de Cerdagne*. Electrified with the third rail since the beginning, it uses yellow-painted EMUs that earned the name of "little yellow train" or "canary". The original rolling stock is still in use, although renewed. It's located in the Pyrénées-Orientales department (yellow area on the map).

### *Corsica*

- Corsica has a fully-NG railroad still connecting the major cities, called the *Chemins de fer Corses*. Its first branch was opened in 1888. Part of the lines was damaged during WW2 and never rebuilt, but the remaining part is still active today. Railcars were used to haul passengers since the Thirties; until the mid '90's it also had an important freight traffic.

Together with these lines, the Set also features some very local, tramway-like lines. The most prominent are:

- The *Tramways du Mont-Blanc* and the *Chemins de fer du Montenvers*, which opened in 1909 and are still active now; they're characterized by their rackrail and catenary-powered EMUs;
- The *Chemins de fer Économiques du Nord* had a 50-km line linking the town of Annemasse, close to the Swiss border, to the town of Sixt; the line was electrified in 1933 with catenary and featured unique rolling stock, including an interesting EMU design;

- Other local, yet interesting lines were the *Tramways d'Ille-et-Vilaine* (dark red area), the *Tramways de l'Ain* (called *CF Écoomiques du Sud-Est* before 1920, in the brown area), and the *Tramways de l'Isère* (called *Tramways de l'Ouest du Dauphiné* after 1920, in the mid-tone blue area). Most of them opened around 1880 and closed down around WW2.

## 2.2. The rolling stock: motorized vehicles

Diversity was the rule across the different French narrow gauge networks. Each of them bought specific rolling stock to suit their needs in terms of traffic and characteristics of the track, resulting in a somewhat heterogeneous mix of locomotives, railcars and wagons. This set recreates the main types of vehicles used, differentiating them across the real companies that owned them.

### 2.2.1. The steamers

#### 030T Tramway



*Available: 1881; Max speed: 45 km/h; Power: 125 hp; TE: 35 kN.*

A generic model of the many tramway-like engines used in the early years all across the country. Trains pulled by such engines were usually small and often ran on tracks laid directly on the main streets of villages and towns. In the Set, this engine can only pull short 2-axle wagons.

#### 030T



*Available: 1881; Max speed: 45 km/h (50 km/h after 1922); Power: 250 hp (375 hp after 1922); TE: 38 kN (56 kN after 1922).*

This was by far the most common locomotive type to be seen on French narrow gauge networks. Numerous manufacturers all across the country built engines of this type, and production went on for about 50 years, adopting many technological improvements as time went by. To reflect this, the specs get improved in 1922, with an increase in top speed, power, and tractive effort. It's available in the colors of 8 local companies; in the game, the chosen company will sometimes have an effect on the engine's looks and specs, especially in the early years. For example, the *Tramways de l'Isère*'s variant features the typical twincab look until 1915.

#### 031T



*Available: 1888/1886; Max speed: 50/40 km/h; Power: 230/275 hp; TE: 49/63 kN.*

This engine type was developed to address the need for slightly better performances than the 030T's could give. It was essentially a 030T with a longer firebox, requiring an extra rear axle to support its



weight. In the set, it's available in two versions: one with a higher max speed, as the variant used on the *Réseau Breton* and in Corsica, and one with a stronger power, as the engines used on the *La Mure* mountain railway. Historically, this latter type almost always traveled “flipped”, that is, as a cab-forward engine, due to the steep lines it was used on; traveling like this helped the water to get more uniformly distributed in the boiler.

### 120T



*Available: 1892; Max speed: 55 km/h; Power: 180 hp; TE: 26 kN.*

This was a common engine type to be found on somewhat flat networks, where large amounts of power were not needed. Although somewhat weak, this locomotive can pull a few passenger coaches at higher speeds than any other narrow gauge engine of its time. It's available in the set in the *Réseau Breton* and *Chemins de Fer de Corrèze* liveries.

### 021T *Improved!*



*Available: 1892; Max speed: 25 km/h; Power: 250 hp; TE: 29 kN (216 kN on rackrail tracks).*

At the turn of the century, new mountain lines were being opened to service many towns and villages across the Alpine region. Due to the limitations imposed by the technology of the time, the best solution to get past steep grades was often to equip a narrow-gauge railway with a rack; specific locomotives were fitted with one or more pinions which would drive the train upwards, using the rack to gain traction. Such a system would guarantee a very strong tractive effort; however, due to the limited resistance of the materials used, the maximum speeds reachable when driving on such rackrail tracks were extremely limited.

The Set includes the engine used on the *Chemins de Fer du Monténvers*, which featured two fake-axles powering one pinion each for rackrail traction. Only one axle was powered on normal adhesion tracks, hence the low tractive effort when the rack is absent.

*When used in combination with the driving trailer, this locomotive supports push-pull mode.*

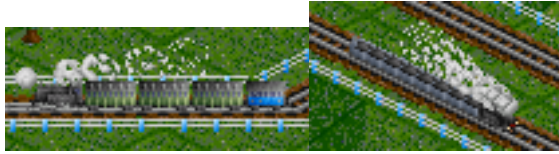
### 020 020T



*Available: 1895; Max speed: 40 km/h; Power: 300 hp; TE: 78 kN.*

The first narrow gauge Mallet engines were developed in the early 1890s to deal with steep and winding tracks. Their rear set of drivers was fixed to the boiler, while the front set was free to swing sideways by a small extent; this system allowed the locomotive to develop superior power while still being able to negotiate the tight curve radius of a mountain track. In the set, this type of locomotive is available in the liveries of the five railway companies that owned them; the Corsican, *Corrèze*, Brittany, Vivarais and *Tramways d'Ille-et-Vilaine* networks. The latter two actually owned a cheaper, underpowered version of this engine, and this is reflected in the Set as well, featuring lower power, weaker TE, and cheaper running costs.

## 030 030T



*Available: 1903; Max speed: 40 km/h; Power: 500 hp; TE: 81 kN.*

Basically an enlarged version of the earlier Mallets, these engines were among the largest narrow gauge locomotives built in Europe. The *Vivarais* network ordered four units of those for their steep tracks; the *Réseau Breton* also had a batch of similar locomotives, to pull heavy freight trains.

## 040T (T37)



*Available: 1903; Max speed: 35 km/h; Power: 350 hp; TE: 66 kN.*

The *Elsass-Lothringen* company, under German rule until WW1, ordered twelve small yet powerful steamers to pull mostly freight trains around the hilly region of Alsace. The specific model was named “T37” by the network. Quite a unique engine type, it ended up being the only narrow gauge steamer to enter the SNCF classification after the nationalization of railway networks in 1938. It’s a somewhat slow, but powerful and cheap choice when a bit of extra power is needed.

## 230T



*Available: 1904; Max speed: 55 km/h; Power: 285 hp; TE: 62 kN.*

Together with the 120T, this design gave birth to the fastest narrow gauge locomotives built in the country. Locomotives of this type were ordered by the *Réseau Breton* and the *Chemins de fer du Sud de la France* (now part of the *Provence* network), and used to pull bogie-mounted passenger coaches around the seaside towns of Brittany and Côte-d’Azur, respectively. They were especially used to carry tourists to the seaside resorts.

## 150T



*Available: 1911; Max speed: 40 km/h; Power: 470 hp; TE: 90 kN.*

An impressively large steamer for narrow gauge railways, this steamer was built by the *Compagnie du Nord* for the small *Guise-Hirson* line, close to the Belgian border. It can be an alternative to Mallets where a slightly higher tractive effort is needed.

## 040T



*Available: 1923; Max speed: 40 km/h; Power: 270 hp; TE: 79 kN.*

Light freight service was an important source of income for many metric-gauge networks. To address this need, new small and powerful locomotives were introduced. Many of them were bought by mines or factories and used in private industrial networks. However, a batch of those engines was also ordered by *Tramways d'Ille-et-Vilaine* to replace their aging, underpowered Mallets on freight operations.

## 141T



*Available: 1948; Max speed: 50 km/h; Power: 350 hp; TE: 96 kN.*

As most of the French narrow gauge networks were switching to diesel traction, a few large, late steamers were still being designed for the colonies' networks. Some of these never left the country and were used as an alternative to modern railcars or diesel shunters.

### 2.2.2. The diesel locomotives

#### CFD "X"-type shunter



*Available: 1936; Max speed: 45 km/h; Power: 180 hp; TE: 45 kN.*

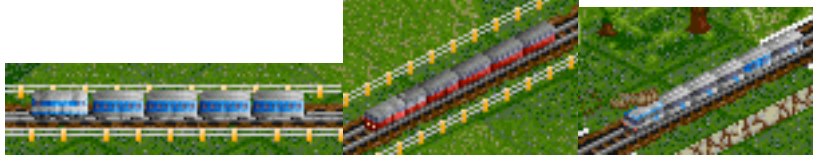
In the late Thirties, many narrow gauge networks had already switched to diesel traction for their passenger service, adopting railbuses and railcars. It didn't take long to apply the same concept to freight trains. The early shunters were built on old steamers' chassis, replacing the old mechanics with a small diesel (or sometimes gasoline) engine and a mechanical transmission. This solution turned out to be popular, and new shunters were being built well after WW2 across the whole country.

#### Brissonneau-Lotz "LT"-type shunter



*Available: 1937; Max speed: 50 km/h; Power: 240 hp; TE: 65 kN.*

The Brissonneau-Lotz company was well known as a pioneer of diesel-electric traction. When railway companies decided to turn their retired steamers into diesel shunters, a common practice from the late Thirties to the early Sixties, they sometimes chose this technology to build the shunters, so that they would obtain engines that were more refined, effective and powerful than the cheaper mechanical transmission alternative. The higher initial cost, however, made this solution a less popular one.

Brissonneau-Lotz “BB 600cv” *Improved!*

*Available: 1951; Max speed: 60 km/h; Power: 600 hp; TE: 132 kN.*

The first truly powerful diesel locomotive on narrow gauge lines, a few units of this engine type were built in the early '50's for the largest surviving networks. They featured the dependable diesel-electric transmission type their builder was well known for. They were employed on both passenger and freight traffic, and a few units are still running today.

*When built after 2005 and used in combination with a driving trailer of the same era, this locomotive supports push-pull.*

## CFD “BB 400”



*Available: 1963; Max speed: 50 km/h; Power: 414 hp; TE: 94 kN.*

In the early Sixties, the workshops of *Chemins des fer Départementaux* designed an all-purpose diesel engine that could be cheap enough to keep medium-to-low-traffic lines profitable, yet strong enough to replace steam traction on steep tracks. Additionally, it could run on either standard or narrow gauge tracks by simply replacing the trucks. This engine type would soon become the Corsican railways' workhorse and, with a few enhancements, is still in production today.

SLM “HGm 2/3” *New!*

*Available: 1967; Max speed: 35 km/h; Power: 650 hp; TE: 45 kN (255 kN on rackrail tracks).*

As the early rackrail steamers began to age, the need for a replacement arose on those lines that kept the rack system. Alongside modern electric railcars, a few companies ordered some small diesel shunters equipped with a pinion, to be used on rack lines. An example of this was the Swiss-built engine used on the *Chemins de fer du Monténvers*, used to haul passenger trains during the peak season, and even some occasional freight trains.

*When used in combination with the driving trailer, this locomotive supports push-pull.*

Schöma “CFL 150” *New!*

*Available: 1973; Max speed: 50 km/h; Power: 250 hp; TE: 47 kN.*

Eventually, the small, early diesel shunters built on the retired steamers' chassis started to age in their turn, and a modern replacement was needed for those light, mostly industrial lines where the traffic was not heavy enough to justify the power and costs of the large BB diesels. This small German-built model, very widespread and available in many sizes of narrow gauges, helped keep those low-traffic lines still profitable while, at the same time, improving reliability and exhibiting a more modern look.



### 2.2.3. The diesel railbuses and railcars

#### “Turgan-Foy” railbus



*Available: 1903; Max speed: 35 km/h; Power: 20 hp; Capacity: 12 passengers*

Around the turn of the century, many companies experimented small, tramway-like cars powered by a cheap gasoline engine to replace costly steamers on the shortest, less frequented branchlines. Most of the times, these vehicles turned out to be one-of-a-kind railbuses, whose specs and looks varied from company to company. The railbus used by the *Chemins de fer de la Drôme*, built in 1903 by Turgan-Foy in two units, is included in the French Set to represent these early attempts. Its very weak power and tractive effort naturally relegate it to the shortest, flattest lines.

#### De Dion-Bouton “JM” railbus New!



*Available: 1923; Max speed: 50 km/h; Power: 50 hp; Capacity: 20 passengers*

To meet the rapidly growing demand, some automobile manufacturers came up with their own standardized railbus designs, most of which had the look and feel of buses placed on rails. De Dion-Bouton was one of these pioneers, with their first gasoline-powered “JA” model, and especially with its replacement, the diesel-powered “JM”. This model was highly successful, thanks to its simplified maintenance (it could be repaired with parts taken from many contemporary trucks or buses), low running costs, and relatively high speed. Another of its peculiarities was its built-in reversing system, which allowed raising the vehicle over the rails and manually reversing it, using a special turntable mounted under the chassis. On the other hand, its weak tractive effort made it impractical on hilly or mountain lines. In the Set, this vehicle is available in five different companies’ liveries, to recreate its widespread presence. It can be fitted to carry passengers or tourists, and can mount a small mail compartment, at the expense of a few passenger seats.

#### Renault “NK” railcar New!

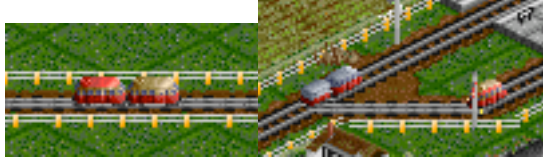


*Available: 1924; Max speed: 45 km/h; Power: 40 hp; Capacity: 36 passengers, 15 bags of mail*

Not all of the early attempts to replace steam with diesel led to the simple transformation of buses into rail vehicles. A few automobile manufacturers, such as Renault, preferred to go the other way around, designing a vehicle that exhibited train-like looks and that could offer higher capacity and better comfort. However, the somewhat underpowered engines of that time limited their success, relegating them to very flat lines and making it impractical to attach more than one trailer to them.

*When traveling alone, this railcar reverses direction at stations (driving back in reverse).*

### Billard “A80D” railbus *Improved!*



*Available: 1936; Max speed: 50 km/h; Power: 80 hp; Capacity: 30 passengers*

In 1936, a few local railway companies joined forces with the Billard Workshops in Tours to design together a new mid-size railbus to modernize their rolling stock fleet. The result of this study was the “A80D” model; its name was derived from its characteristics, since its diesel engine (hence the final “D”) could develop 80 hp. Sturdy, light and cheap to maintain, this railbus met a large success. Many units were delivered to a large number of local networks, where they sharply cut the overall costs. Billard also built a line of railcar trailers, derived directly from un-motorized A80Ds, which would be long used with many generations of railcars.

*When traveling alone, coupling multiple units of the same type together, or using it in conjunction with the railcar trailer, this vehicle supports push-pull.*

### Billard “A150D2” railcar *Improved!*



*Available: 1938; Max speed: 55 km/h; Power: 150 hp; Capacity: 54 passengers*

The A80D’s large success ignited interest in a new design, which would essentially be made of two A80Ds connected together by a motorized bogie. The idea was to be able to carry a larger number of passengers without having to double the running costs. This railcar also saw the tryout of luxury service on narrow gauge lines, when a bar was installed in one of these units, to be used for high-end service as the *Flèche des Cévennes*. The burst of WW2, as well as the competition by other constructors’ large narrow gauge railcars, somewhat limited the success of this interesting design, which was only built in four units (only one of them still survives today).

*When traveling alone or coupling multiple units of the same type together, this vehicle supports push-pull.*

## 2.2.4. The electric locomotives

### “Thury” engine



*Available: 1903; Max speed: 35 km/h; Power: 500 hp*

These revolutionary “Bo-Bo” engines were developed with the goal of replacing steam traction on the *La Mure* mountain line, where they would be used to haul long, heavy coal trains. They were one of the first applications of electric traction on railway transport, at a time when the main railway companies were yet to conduct their preliminary feasibility tests. These engines’ high cost and low maximum speed were more than offset by their power, dependability and durability.

### “Sécheron” engine



*Available: 1932; Max speed: 40 km/h; Power: 920 hp; TE: 177 kN.*

With their massive power, these engines were stronger than any other narrow gauge locomotive of the time (and later). They were designed to replace the *La Mure* line's first batch of engines; their excellence in performing this task is proven by the fact that most units are still active nowadays, after some 80 years of age. Used to haul heavy coal trains until the closure of freight traffic on their line, they can now be seen at the head of touristic trains.

### “Alsthom-Buire” motorized van New!



*Available: 1933; Max speed: 50 km/h; Power: 400 hp; TE: 65 kN.*

When the *Chemins de fer Économiques du Nord* electrified their tracks between Annemasse and Sixt, located in the Alpine region bordering with Switzerland, much attention was paid to which types of new rolling stock would be purchased. The choice fell on the technology proposed by Alsthom; a 400-hp engine powering a new type of railcars, also included in the Set, as well as this small freight locomotive, which also featured a mail compartment. This design, however, failed to become widespread, due to the small number of lines it could run on; as a result, only two units were finally built.

## 2.2.5. The electric railcars and multiple units

### “Thomson-Buire” railcar New!



*Available: 1913; Max speed: 35 km/h; Power: 260 hp; Capacity: 36 passengers, 15 bags of mail*

The increasing coal traffic on the “La Mure” mountain line soon required the combined effort of most of the new electric locomotives; this made it necessary to order new rolling stock, specifically designed for passenger service. Budget constraints led to the choice of a somewhat already-outdated design, featuring a wooden chassis covered with metal sheet. Their limited max speed was not a handicap on the winding mountain lines it would run on, but made them impractical anywhere else. After the closure of a few passenger-only branches, these vehicles were also used to pull freight trains and to perform shunting service.

*When traveling alone, this railcar reverses direction at stations (driving back in reverse).*

### “Alsthom-Hormes-et-Buire” railcar **New!**



*Available: 1933; Max speed: 65 km/h; Power: 400 hp; Capacity: 40 passengers, 15 bags of mail.*

Specifically designed for the Annemasse-Sixt mountain line on the Swiss border, these large railcars used to feature the state-of-the-art technology in terms of narrow gauge railroading. Their good amount of power, which they shared with the freight locomotives used on the same line, and their high max speed due to longer gear ratios, made them behave very well in their service. They were coupled with specifically-built passenger cars, which offered a good level of comfort, up to a maximum of three coaches per railcar. Occasionally, they were also used with older rolling stocks, including older coaches and freight wagons. They all ended service in 1959, when their line was closed down.

*When traveling alone, this railcar reverses direction at stations (driving back in reverse).*

### SLM “Bhe 4/4” railcar **New!**



*Available: 1953; Max speed: 25 km/h; Power: 640 hp; Capacity: 84 passengers*

In the early Fifties, the existing rackrail-equipped mountain lines faced a stroger demand for passenger service, especially from tourists, at the same time as their steam locomotives started to age. Dieselization wasn't practical at that time, since the technology didn't allow building locomotives powerful enough to replace steam while being at the same time light enough to run on those lines. Third rail was ruled out by the heavy snowfall, which would make it too expensive to maintain. The choice therefore fell on a catenary-powered AC electrification, also being experimented on the neighboring standard gauge lines connecting Aix-les-Bains to Annemasse (and Geneva). New rolling stock was ordered, with the Swiss firm SLM designing the chassis, body and bogies, and Örlikon supplying the engine. These electric railcars proved to be so sturdy and reliable, that they are still in service today, some 60 years after construction. The Set includes these railcars both in the *Chemins de fer du Montnvers* and the *Tramways du Mont-Blanc* liveries.

*This railcar supports push-pull.*

#### 2.2.6. The 3<sup>rd</sup>-rail electric multiple units

##### “Z200”



*Available: 1901; Max speed: 35 km/h; Power: 110 hp; Capacity: 30 (1<sup>st</sup> class), 40 (2<sup>nd</sup> class) passengers.*

Due to its particularly steep and winding tracks, the mountain line around the Mont-Blanc needed specific rolling stock, which could be sturdy, resistant to heavy-duty service under bad weather conditions, easy to operate and with a good traction. The result was a rather unique electric multiple unit, which could mix up passenger coaches, vans, and freight wagons, all mounted on interchangeable, 3<sup>rd</sup>-rail powered 2-axle trucks. This very interesting design combined the best possible traction (since every car of the train was powered) with a very flexible system that could allow for mixed consists hauling virtually any kind of cargo.



“Z100” *Improved!*



*Available: 1909; Max speed: 60 km/h; Power: 300 hp; Capacity: 40 passengers.*

The construction of the *Cerdagne* line in the Pyrénées mountains was undertaken by the *Compagnie du Midi*, one of the main national railway operators at that time, as well as a pioneer of electric traction. When it came to designing the line’s rolling stock, which had to deal with steep and curvy tracks, it was decided to use this small mountain line as a testbed for electric traction. The original rolling stock was formed by 3<sup>rd</sup>-rail powered bogie-mounted electric railcars that could be linked in multiple units, and which could also occasionally pull unpowered passenger coaches or freight wagons. Most of the original rolling stock is still active today.

*Under certain conditions, imposed by OTTD limitations, this railcar supports push-pull.*

### 2.3. The rolling stock: coaches and wagons

The French narrow gauge networks employed a variety of wagons. The aim of this set is to reproduce the most common, or significant variants, to provide the best gaming experience with the most popular industry sets for (O)TTD(P); the standard industries, ECS, and FIRS.

Realistic, historical capacities have been chosen for all of the Set’s rolling stock. Whenever possible, coaches and wagons will carry the same amount of cargo as they could in reality; when the data was unavailable, the best guess was used. Balancing is going to be obtained by adjusting running and purchasing costs, rather than capacities.

#### 2.3.1. Passenger coaches and mail vans

Standard 2-axle coaches were the most common form of passenger transportation around French narrow gauge lines for at least the first 45 years of their existence, until railbuses started to be an attractive alternative. They usually were very basic, being able to carry a low number of passengers in a limited comfort; the rare exceptions were the “saloon cars”, used in the early years as luxury coaches on some networks. Depending on the coach type, the passengers would access the interiors either through platforms at the extremities, or through one of the many doors on the sides, each leading to a specific compartment.

The Set includes numerous coach variants, ranging from small tramway-like wagons to larger versions.

Bogie-mounted coaches were introduced around the turn of the century, to improve capacity and comfort. Their design usually followed their smaller, 2-axle counterparts’. In the Twenties, even larger bogie-mounted coaches were developed, which would mimic the looks and the comfort of the standard gauge wagons.

The French Set includes refitting options to various classes for all passenger wagon types which historically supported them. As such, a passenger coach could be refitted to 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> class, or a mix of those three. Low-class coaches will haul more passengers, cost slightly less in terms of maintenance, and their “cargo aging” will be quicker, to recreate those coaches’ lower comfort. By default, a newly bought passenger coach will initially appear in its lowest available class.

Refitting between classes is not free, as it implies partially or entirely refurbishing the wagon. Due to the more luxurious trim, a refit to a higher class will be more expensive than a refit to a lower class.

*The difference in “cargo aging” between the classes will only be truly visible over long distances.* Due to the way cargo aging works in the game, there will be little to no difference between the profit generated by a 3<sup>rd</sup> class car or a 1<sup>st</sup> class car when traveling a short or medium distance: on the other hand, passengers will pay more for extra comfort when traveling across a long distances (about 60 tiles or

over). It is therefore advisable to use lower classes for tramway, local or short distance services, and higher classes for long distance services.

In a few cases, luxury 2-axle “saloon” coaches provide extra comfort for a lower number of passengers. Additionally, if a “saloon” car is placed at the end of the train, it will gain a bonus in terms of a slower “cargo aging”, thanks to the unobstructed view behind the train the passengers will enjoy. As it goes with classes, this bonus will be more effective when traveling across long distances.

A common sighting in these network’s consists were mixed coaches, which could transport a limited number of passengers, while keeping some space for a baggage or mail compartment. Specific mail wagons were also available. Most of the times, these looked very similar to their 2-axle passengers counterparts; however, in 1904, a specific, higher capacity mail van was introduced on some networks. Some of these special vans later got refurbished to become large capacity goods wagons.

Some situations required the train to travel with the engine in the tail of the consist, pushing the wagons instead of pulling them. An early example of this were the rackrail-equipped mountain lines, where, for safety reasons, the locomotive needed to be attached on the side of the lower station, regardless of the direction of travel. This required the introduction of control cars, or driving trailers. While popular on standard gauge lines, such coaches were a rather uncommon sight on narrow gauge tracks, limited to rackrail mountain lines. It wasn’t until 2005 that the *Chemins de fer de Provence* introduced push-pull trains driven by a diesel locomotive.

As the railway companies started switching to diesel or electric traction, railbuses and railcars slowly replaced steam locomotives; as a result, some of the coaches and wagons were converted and used as trailers for the railcars, changing their livery accordingly.

Specific railcar trailers were also introduced, whose size and shape would mimic the railcars they’d be attached to. Such trailers were used to carry not only passengers, but also mail and, in some cases, even light freight. In a few cases, these trailers were equipped with a small driving cab, and could be used in push-pull service in conjunction with certain railcars.

In the Set, all of the coaches come in special styles and liveries, to best match the type of locomotive or railcar they’re attached to, as well as the timeframe they were built in. The livery selection is automatic and takes place as soon as the vehicle is attached to a consist. This may also affect the coach’s capacity and “cargo aging”, as well as its refitting options in terms of classes.

### 2.3.2. Freight wagons

Most of the freight narrow gauge trains were composed by light, small 2-axle wagons capable of hauling a limited quantity of cargo. The most widespread types included low-sides open wagons, flat trucks, and closed vans. Tank wagons were quite rare if not totally absent, and have been added to the Set mostly for playability reasons.

A few railway networks had a refrigerated variant of the closed van, which allowed a slower decay of the cargo it transported. This variant is also present in the Set: certain perishable cargo types will allow refitting to it. This will imply an extra cost to mount the icebox (or the refrigerator unit), higher maintenance costs, and a slightly lower capacity, but the “aging” of the transported cargo will be considerably slower.

Bogie-mounted flat trucks, obtained from the chassis of old passenger coaches, were introduced around the turn of the century, to haul larger pieces of cargo such as wooden logs, steel beams, machinery, or vehicles.

The “La Mure” mountain network used a 3-axle heavier open wagon specifically designed for its tracks, which also has been added to the Set.

After WW2, a few more modern wagon types were introduced; the Set includes a heavier hopper wagon, historically used on the “La Mure” network and suitable for minerals, as well as a silo wagon, used on the *Provence* network, suitable for pulverized goods such as grain, cement, and certain kinds of food such as flour.

Just as the coaches, even the freight wagons come in various liveries, which will be automatically chosen when the wagon is attached to a consist. When building a train of the “La Mure” railway, 3-axle variants of the low-side open wagon and the closed van will be used instead of the standard 2-axle design.

The freight wagons in the French Set support OpenTTD’s *autorefitting* feature. As a result, when a freight train is sent to a station where some cargo is already waiting, the train orders can be set up so that the freight wagons can be automatically refitted, for no extra cost, to the cargo type that’s waiting at the station. This way, the cargo can be immediately loaded, without having to send the train to a depot first.

This feature will only produce results if the cargo waiting at the station can normally be hauled by the wagons attached to the train, without requiring a major modification to the wagons themselves. In case the waiting cargo requires a minor work on the wagons (such as, for instance, cleaning and installing a tarp, as it could be when switching from coal to grain), refitting can still be automatically performed at a station, for a cost. Conversely, if refitting includes performing important work on the wagon (such as switching from a normal closed van to a refrigerated van to transport fresh food), it will have to be performed at a depot, for a higher cost.

Following is a summary table of all the engines used by each included historical company, as well as the available passenger wagons’ classes (and capacities) through the years:

Area	Company	FRSet start	Steamers	Diesels, electrics	DMUs	Short passengers	Bogie passengers
North-West	Réseau Breton	1888	031T, 120T, 020 020T, 030 030T, 230T			Not possible	Bains: 35 1st/2nd: 42 3rd: 58
	Côtes du Nord	1900	030T		JM, NK	26	33
	Twys de l'Ille et Vilaine	1881	030T, 020 020T, 040T		JM	20	33
	Petit Anjou	1881	030T		JM	1st: 16 1st/2nd: 21 2nd: 24	33
Center	Blanc-Argent	1900	030T			1st: 16 1st/2nd: 21 2nd: 24	Not possible
	PO Corrèze	1892	120T, 020 020T	BB400		Saloon: 15 1st/2nd: 28 3rd: 40	2nd: 42 3rd: 58
	Twys de Corrèze	1900	030T			20	33
North-East	Cambrésis	1881	030T, 141T			20 (< 1922) 1st: 30 2nd: 40	33 (< 1922) 2nd: 42 3rd: 58
	Alsace-Lorraine	1903	040T (T37)			1st: 30 2nd: 40	2nd: 42 3rd: 58
South-East	Vivarois	1895	020 020T, 030 030T		A80D, A150D2	Saloon: 15 2nd: 26 3rd: 38	Mix: 44 (< 1921) 3rd: 56 (< 1921) 1st/2nd: 42 2nd: 52
	Provence	1904	230T	BB 600cv, BB400	A80D, A150D2	Not possible	1st: 40 2nd: 54
	La Mure	1886	031T	Thury, Sécheron	Ilormes-et-Buire EMU	1st/3rd: 30 2nd/3rd: 32	1st/2nd: 56 2nd: 64
	PLM	1901			Z200	1st: 30 2nd: 40	Not possible
	Twys de l'Isère	1881	030T			20	33
	Twys de l'Ain	1881	030T		JM	20	33
South-West	Ligne de Cerdagne	1910			Z100	Not possible	46
Corsica	Chemins de fer Corses	1888	031T, 020 020T	BB 600cv, BB400	A80D	Saloon: 15 2nd: 26 3rd: 38	Mix: 44 (< 1921) 3rd: 56 (< 1921) 1st/2nd: 42 2nd: 52

### 3. The dynamics of the Set

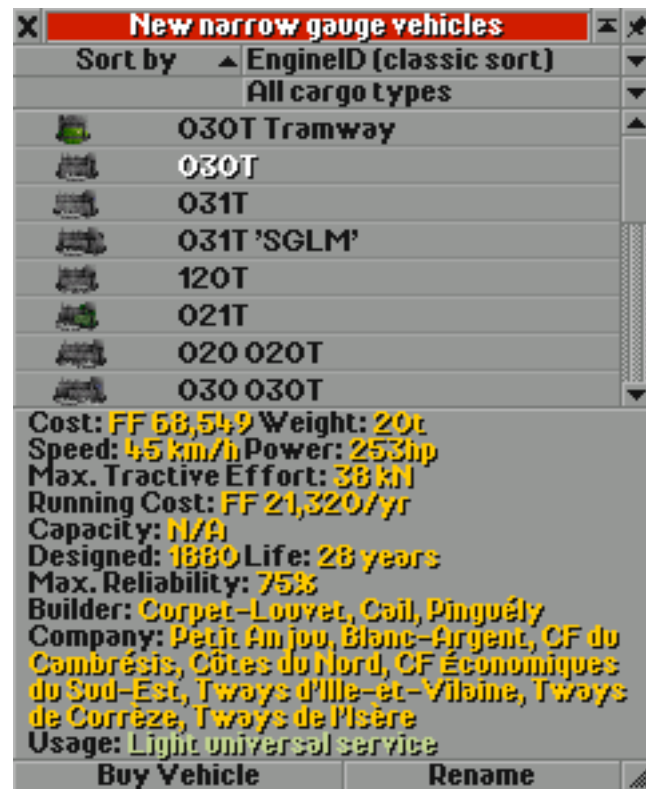
#### 3.1. Choosing a livery for a consist

Historically, many narrow gauge networks shared the same locomotives and MU designs. This peculiarity has been recreated in the Set: as a result, certain engines are available in multiple “liveries”. When this happens, a newly-built engine will always appear in the livery of a “default” company, but it will be refittable to the liveries of other companies as well.

By default, TTD doesn’t allow refitting a vehicle with no capacity at all, such a locomotive is. This issue has been solved allowing certain locomotives to be refitted to passengers: the choice has fallen on this cargo, rather than a fictitious one such as “locomotive regearing”, to enhance compatibility with third-party cargo sets such as ECS and FIRS.

Obviously, locomotives will never be able to carry any passengers.

The following paragraphs show how this works, taking a 1910-built 030T steamer as an example. This is how the locomotive looks in the purchase list:



As stated by the “Company” line at the bottom, this engine is refittable to the liveries of eight different companies; a few are main networks, and others are minor tramway companies. The first entry displayed in the “Companies” list is always the engine’s default livery.

Now, after buying the engine, we note that the “refit” button is enabled:



This happens even though the engine can't carry any cargo. That's a sign that it supports multiple liveries, and we can choose any of them through refitting.

The next step is about exploring the available liveries. Clicking on the refit icon displays the following window:



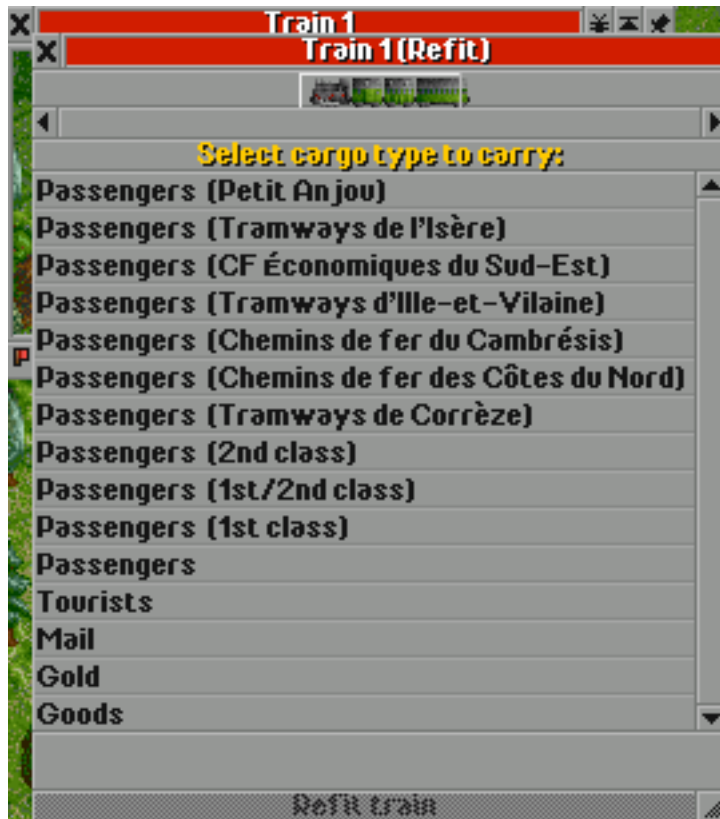
The available liveries are listed there. Since we still didn't do any refit, the engine bears the livery of the first company on the list.

Refitting this locomotive to the "Tramways de l'Isère" livery will make it get its twincab looks, historically used by the Tramways de l'Isère. Some of the specs will change too.

Note: *not all the refits imply a graphic change for the engine.* A few of them only have effects on the coaches or wagons attached to the engine. This is because, historically, a few railway companies shared the same or a very similar color scheme for their engines (black and dark green were the most common colors for steamers; grey-red and, later, cream-red was the most common livery for diesel railcars). In our example, there will no difference between the 030T's looks in the "Petit Anjou" and the "Blanc-Argent" liveries.

Let's see now how we can change the livery for a locomotive when it's placed at the head of a consist.

As an example, we buy a new 1910 030T and attach a mail wagon, a short passenger car and a bogie-mounted passenger car, in that order. Then, we try to refit the train. Performing these steps in the mentioned order should yield this result:

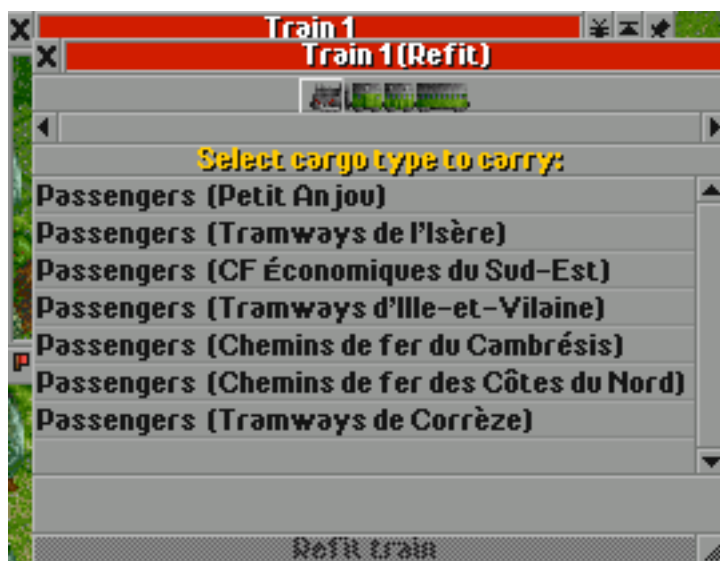


This window contains a long list of refits, and might look confusing. At a first glance, it contains:

- At the top, seven of the eight liveries the 030T can take;
- Then, three entries deal with passenger “classes”, displayed as subtypes;
- At the bottom, five entries for the regular cargoes (note: the ECS cargo set is being used).

To avoid confusion, it's important to mention that, *in the French Set, it is always recommended to refit each vehicle type separately, as opposed to the whole consist altogether.*

A good approach to refitting is to only select vehicles of the same type at a time. This is the way the set was designed to work. Refitting together vehicles of different types may lead to undesirable results and should always be avoided.



With this in mind, let's proceed by steps. Selecting the engine only yields the result shown in the above screenshot. These are the liveries for the 030T we are familiar with; the only exception is that the Blanc-Argent option is now absent.

The reason is that the Blanc-Argent network had no bogie-mounted passenger wagons at all. This is mimicked in the Set. Indeed, if we removed the bogie-mounted passenger car from the consist, we'd see the Blanc-Argent livery reappear in the list. (You can try this yourself).

Let's now select all the other vehicles, one by one:



The mail wagon can haul mail, gold, and goods. While the first two seem sensible, the third one doesn't seem so. The reason is that some railway networks (namely the Corsican and the *Vivarais* companies) used to refit some old mail vans and employed them as large-capacity goods wagons. This is mimicked by the Set. Unluckily, TTD doesn't allow to easily change a vehicle's list of available cargoes; as a result, the mail wagon has to be able to carry goods all the time. However, when this is historically incorrect, as it'd be in our case, the capacity in terms of crates of goods is severely reduced, making regular closed vans a better choice.



The short passenger wagon yields three possible refits for the same cargo: those are the already mentioned classes. A more luxurious class implies lower capacity, higher maintenance costs, slower cargo aging and, in a few cases, a lower loading amount (when the coach has fewer side doors). When



a passenger coach supports multiple classes, the lowest class is always the default choice. Refitting to a higher class is always more expensive than refitting to a lower one.



Finally, the bogie-mounted passenger car is refittable to passengers and tourists. Note that there are no classes available. The reason is that some minor railway networks such as the Petit-Anjou only had one class for certain coach types.

The train we just created has the colors of the Petit-Anjou network. This is because we still didn't apply any refits; in particular, the engine is still in its default livery, which happens to be Petit-Anjou.

*In the set, the liveries of all the vehicles in a consist will belong to the same historical company, which is decided by the leading engine.*

This was implemented for realism's sake. In the game, all the vehicles can appear in many historical companies' liveries. However, *when in a consist*, they will always adopt the livery chosen for the leading engine; in fact, the leading engine is the only vehicle in the consist with any livery choice.

Therefore, if we want to change our consist's livery, we need to only select the leading engine, and then refit it to something else. For example:





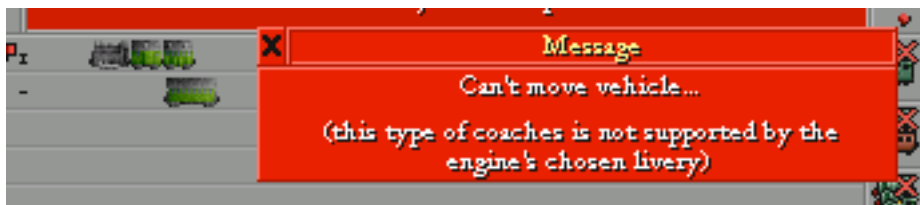
Clicking on “Refit train” yields this result:



Voilà. In 1910, the Tramways de la Corrèze used 030T’s with black boilers and green tanks, and their passenger and mail wagons were painted brick-red. Moreover, the short passenger coaches had open platforms at the extremities, rather than multiple doors on the sides. *In the Set, refitting the engine only is enough for all the trailing vehicles to change livery as well.*

Of course, if at this point new wagons are purchased and attached to the train, they will follow the leading engine’s livery; in this case, passenger and mail wagons will turn brick-red.

The Set also checks for impossible combinations, and will prevent them to avoid consists that would not be historically correct. In our example, let’s remove the bogie-mounted passenger coach from the consist, and then refit the engine to the Blanc-Argent livery (which should reappear). Now, let’s try to add the bogie-mounted passenger coach back to the consist:



Again, the reason for this is that the *Blanc-Argent* network didn’t have such kind of wagons. A similar restriction applies to *Réseau Breton* trains, which had no 2-axle passenger wagons.

Some engines are not refittable and will always appear with one livery. A few of them were very specific of a certain railway company, such as the locomotives used on the *La Mure* mountain line; others, instead, were more widespread and represent units that could be found anywhere in the country, such as the small diesel shunters from the late Thirties.

### 3.2. Multiple traction

The same rules described above apply when coupling multiple engines in the same consist. Indeed, multiple traction was a very common sight on French narrow gauge tracks, especially in the early era, before the introduction of the Mallet engines.

Multiple traction can only be implemented by using “compatible” engines. To be compatible, two or more locomotives must be refitted to the same historical company’s livery. They don’t necessarily have to be of the same type.

For instance, a 031T steamer and a 120T steamer, both refitted to the *Réseau Breton* livery, can be coupled together. On the other hand, a 120T refitted to the *Réseau Breton* livery won’t be compatible with another 120T refitted to the *PO-Corrèze* livery.

Here is what happens if we try the last example out (year 1903):



When two or more locomotives are coupled in multiple traction, all the trailing engines will not be refittable anymore. Only the leading engine will be refittable, and the livery chosen for it will be applied to all the vehicles in the consist (including trailing engines).

Of course, when a trailing engine is removed from the consist and placed as a stand-alone vehicle (or at the head of another consist), it gets back its refitting ability.

In case of two or more locomotives of different types in the same consist, the leading engine's refittability list will be shrunk to the intersection of all the locomotives in the consist's lists.

Suppose a consist includes a leading engine refittable to liveries A, B and C, and a trailing engine refittable to liveries A, C, and D. In this case:

- The leading engine will be refittable to liveries A and C:  $\{A, B, C\} \cap \{A, C, D\} = \{A, C\}$
- The trailing engine will never be refittable and always follow the leading's livery.

Universal engines mentioned above can be coupled with many other kinds of locomotives regardless of their livery, with very few restrictions.

### 3.3. *Push-pull trains*

Another feature of the Set is the presence of trains capable of reversibility, or *push-pull service*. This is done in four ways, and it only works in certain cases, due to (O)TTD(P)'s limitations.

As a general rule, push-pull behavior is never compatible with multiple traction, except when dealing with railcars and MUs.

#### 3.3.1. *Engines being attached to the other end of the consist*

In certain cases, when a single-headed engine is attached to a passenger consist either made by a combination of short passenger coaches and mail vans only, or by bogie-mounted coaches only, the train follows a special behavior. Upon reaching a track end, the engine moves to the other end of the consist, but the order of the wagons is not flipped. This simulates shunting when the train reaches an end of the station. As a result, the first wagon will become the last on the way back.

Moreover, if the locomotive is flippable (such as all diesels and most of the steamers), it will drive in the other direction on the way back; for example, a steamer that drove with the boiler in the front will drive with the cab in the front after the consist reverses.

As mentioned, this functionality is only available in certain cases. The way OTTD currently works prevents managing push-pull in a consist made with wagons of different lengths; this is the reason why, for instance, a consist entirely made of 2-axle passenger coaches may support push-pull, but a consist made of a mix of 2-axle and bogie-mounted coaches will not.

When the consist doesn't allow this feature, it will behave just like any default OTTD train.

When a saloon car is attached to the end of the train, it is intended to be a panoramic coach, with a higher comfort level thanks to the view the passengers can enjoy. Because of this, upon reversal of the train, the saloon car will be attached to the new end of the train, effectively swapping its position with the engine, while the rest of the consist keeps its original ordering,



The above screenshots show an example of how this feature works. A *Chemins de fer Corses* train pulled by a 020 020T steamer, traveling with the boiler in the front, is made of a mail van, a 2<sup>nd</sup>-class passenger coach, and three 3<sup>rd</sup>-class passenger coaches, in that order. As it reaches the end of the

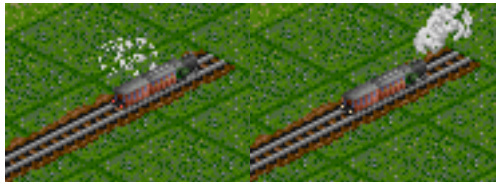
track, the engine is placed at the other end of the train, this time driving with the boiler in the back; attached to the engine is a 3<sup>rd</sup>-class passenger coach, followed by the rest of the consist, with the mail van in the back.

### *3.3.2. Push-pull performed by engines and driving trailers*

In the French Set, three narrow gauge locomotives support driving trailers. These are the 021T rackrail steamer, the HGm 2/3 rackrail diesel, and any Brissonneau-Lotz BB 600cv diesel engine built on or after 2005.

Whenever a driving trailer is attached to a consist led by any of these engines, and there is no multiple traction, the consist may perform push-pull service. Because of OTTD's limitations, the only types of wagons that support push-pull are bogie-mounted passenger coaches (of any type and year of built) up to a maximum of 9. This means that, if all the vehicles between the engine and the driving trailer are bogie-mounted passenger coaches, the train will travel with the driving trailer in the lead, and the engine in the back, upon reversing; otherwise, it will just follow OTTD's default behavior.

Please note that the driving trailer, when part of a consist, must always be put in the last position; therefore, no more than one driving trailer is allowed in a consist. This rule is always enforced.



### *3.3.3. Push-pull performed by railcars and their trailers*

Many of the railcars included in the French Set are bi-directional vehicles; that is, they can travel at maximum speed in either direction. In the French Set, by default, these railcars will simply switch the lights and drive back in reverse whenever they reach the end of the line. Even a consist made of multiple tractions of the same railcar will follow this behavior, so the unit that was leading before the end of the track was reached will become the last unit of the consist on its way back.

An exception to this behavior is a consist made of railcars of different lengths (for instance, a Billard A80D coupled with an A150D2), because of OTTD limitations. Even certain trailers, such as the mail van, will break this scheme. In these exceptional cases, the consist will follow OTTD's default behavior upon reaching the end of the line.

The railcar trailer has been added to the Set to provide extra variety on this side. It's a very versatile vehicle, able to carry many different cargo types (not only passengers, but also tourists, mail, and light goods), to reflect the fact that, on those small secondary lines, it could happen that a vehicle designed for generic passenger service might be used for a different aim. Like other vehicles in the Set, its appearance and characteristics will vary according to the railcar it's being attached to. In a few cases, the railcar trailer will be equipped with a small driving cab, allowing the consist to do push-pull service. In this screenshot, an old A80D in grey-red livery is leading a more recent railcar trailer in cream-red livery; upon reaching the end of the track, the consist reverses with the trailer in the lead, pushed by the A80D.

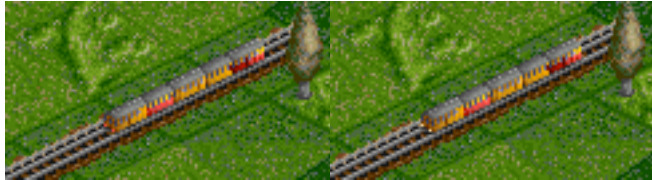


### *3.3.4. Push-pull performed by multiple units*

The French Set includes a few multiple unit trains that can be combined together to form entire consist. OTTD's limitations allowed some of them to always work as push-pull trains, as it is the case

with the Bhe 4/4 rackrail EMU; others, instead, have such a level of complexity that makes it impossible to implement this system, such as the Z200 EMU.

The *Ligne de Cerdagne*'s Z100 EMU is a case in between. It allows very flexible combinations of motorized units and trailers, which can be bogie-mounted passenger coaches as well as other types of wagons. Since the Z100's motorized units are longer than the bogie-mounted passenger coaches, OTTD limitations allow this EMU to only support push-pull if the displacement of motorized units and passenger coaches follow a symmetric pattern with respect to the center of the consist. For instance, a consist made of: M P M P M, where M is a motorized unit and P is a passenger coach, is symmetric and will support push-pull (see screenshot); instead, a consist made of: M P P M M won't.



### 3.4. A special case: the Z200 EMU

The Z200 is the electric multiple unit train the PLM company designed for its mountain line around the Mont-Blanc, linking St-Gervais to Vallorcine and touching the Swiss border.

As mentioned above, this was a very unique train. In a Z200 consist, all the vehicles lied upon a standardized 3<sup>rd</sup>-rail powered 2-axle truck with two engines, capable of developing the power of 110hp; on top of these motorized trucks, different types of bodies were placed, that were able to transport passengers, mail, or any kind of goods.

The result was an electric multiple unit made of mail vans, passenger coaches, closed vans, low-sided open wagons, and flat trucks, each of which was motorized and featured a brakeman's cabin. Every consist was led by a driving van, allowing the personnel to drive the train, and commanding all the engines of each attached car.

Sometimes, non-motorized 2-axle wagons were also added to the consist, whenever the need for traction was not so compelling.

The Set reproduces this vehicle's peculiarities by allowing each Z200 unit to be refittable to any cargo in the game, while maintaining its power, tractive effort, and other characteristics. By default, when a Z200 unit is bought, it will carry mail; through refitting it will be possible to choose the desired cargo. A refitted Z200 unit can appear as a mail van, a passenger coach, a closed van, a low-sided open wagon, a flat truck, or a tanker, depending on the cargo and the subcargo chosen. This allows great flexibility in building a mixed consist.

The only two restrictions are:

- The unit at the head of the consist has to be refitted to mail. This is to recreate the fact that the driving cabs had a small compartment that could be used for that cargo. When refitted to mail, the leading unit has a lowered capacity, to represent the room taken by the driving equipment;
- To prevent unrealistically powerful consists, a maximum of 10 Z200 units can be coupled together.

Any 2-axle coach or wagon can be attached to a Z200 consist. When attached, such a wagon will take the same looks as a Z200 itself, but won't add any power or traction to the consist. This is to reflect the fact that non-motorized and motorized wagons looked very similar.

In a game, the Z200 can be used to form passenger, freight, or mixed consists. With the traction assured by having all the vehicles powered, it can help climb steep tracks in the early years. On the other hand, the high purchase and maintenance costs of such a consist should limit its use only when traffic is frequent enough to keep it profitable. In case only a moderate tractive effort is needed, a combination of motorized Z200 units and non-motorized wagons can be a good choice.

Like most of the other multiple units in the Set, Z200 vehicles cannot be coupled with any other multiple unit types, nor with any locomotives.

## 4. *The French Rails Set*

### 4.1. *Overview*

The French Rails Set is the French Trains Set's natural companion. It features specific rail types for OpenTTD designed to match the vehicles in the train set.

The narrow gauge part of the French Rails Set includes six types of rails:

- Unelectrified narrow gauge rails, available around 1881;
- Catenary-powered narrow gauge rails, available around 1903;
- Third-rail powered narrow gauge rails, available around 1901;
- Rackrail narrow gauge rails, available around 1892;
- Rackrail catenary-powered narrow gauge rail, available around 1953;
- Modern unelectrified narrow gauge rails, available in 1980.

The availability dates for the first five rail types are conditioned on the appearance of the first vehicle requiring that particular rail type, hence the randomness in their introduction date.

The first five track types use wooden sleepers and allow for a maximum speed of 80 km/h; the last track type uses concrete sleepers and allows for a maximum speed of 130 km/h.

Some unique features of this rails set are:

- All the new rails include: specific depots, inspired to those historically used on the respective tracks; wooden fences for all the rail types except unelectrified, where no fences are provided (as it was historically the case); new railroad crossings, whose style changes with time and location, differentiating urban from rural crossings; specific tunnel portals.
- The catenary-powered rails feature specific catenary poles, drawn after the original concrete pylons built in 1906 during the electrification of the “La Mure” mountain line.

Modern unelectrified narrow gauge tracks have been included, but the modern diesel railcars capable of speeds above 80 km/h that would take full advantage of them have not been included in the trainset yet. At this time, modern tracks are there just to provide a cosmetic difference.

All the tracks included in the Set take advantage of the “infrastructure costs” feature of OpenTTD, meaning there will be a maintenance cost associated with having track tiles in the game. The cost is the lowest for the unelectrified tracks, and becomes higher whenever features such as an electrification system, a rackrail, or concrete sleepers are installed to improve the tracks.

### 4.2. *Rackrail tracks*

Rackrail tracks have been included, but their presence in the Set is more an element of historical correctness and of variety (also known as “eye candy”) than anything else; its usefulness in the game is very limited.

Since OpenTTD doesn't feature slopes of different grades, there is little or no need for trains that are extraordinarily capable of climbing steep slopes: even in the early years, any normal-adhesion freight engine will be able to pull a reasonably-sized train up a slope, at least in multiple traction.

Moreover, the rackrail tracks' very low historical speed limit (in certain cases, even lower than 10 km/h) makes rackrail trains too slow to be able to compete against contemporary normal-adhesion engines, which, due to the game's dynamics, can easily achieve significantly higher speeds even when climbing uphill tracks.

In the Set, a rackrail engine will receive a boost in its TE when driving on a track tile equipped with rack. This reflects the fact that the adhesion coefficient switches from about 0.3 to a value close to 1 when the motion is provided by a pinion driving on the rack. However, the final TE will still be determined by the weight gravitating on the pinion itself, so the value cannot surpass a certain amount.

### *4.3. Other track sets*

Although the combined use of the French Rails Set together with the French Trains Set is highly recommended, it's not required. TTDPatch players will find the narrow gauge vehicles in the Set as monorail vehicles; OpenTTD players who do not wish to use the French Rails Set together with the French Train Set can set the only Set parameter to "on", which will disable the French Rails Set and display the narrow gauge trains as normal standard gauge trains. An existing GRF of narrow gauge rails, developed by Cornelius and Mart3p, can be used to replace standard gauge tracks with narrow gauge ones. If this solution is chosen, however, neither the third rail nor the rack will ever be displayed on narrow gauge tracks.

Because the French Set as a whole will come with its own track set, eventually including standard gauge railtypes supporting different values for maximum allowed axle weights, there are no plans to achieve compatibility with other track sets such as NuTracks. Therefore, the French Set can't be used with the narrow gauge tracks recently developed as part of the aforementioned track set; an additional reason for incompatibility is that, at the present time, that trackset does not support third rail nor rackrail on narrow gauge railtypes yet.

### *4.4. For the developers*

Developers of other train Sets that include narrow gauge rolling stock, who wish to code their trains so that they're compatible with the French Rails Set, are more than welcome to do so. To this aim, the internal labels for each single railtype in the Set are provided below:

#### *Label    Description*

NAAN	Unelectrified narrow gauge tracks
NAAE	Catenary-powered narrow gauge tracks
NAA3	Third-rail powered narrow gauge tracks
NRAN	Unelectrified narrow gauge tracks with rack
NRAE	Catenary-powered narrow gauge tracks with rack
NBAN	Unelectrified narrow gauge tracks, higher maximum speed

This labeling standard follows a logic that stems from discussions with other Sets' developers wanting to achieve similar goals as the French Rails Set (namely the CETS set and the Japanese train set). It has been implemented to provide some compatibility across tracksets sharing similar aims. It is based on a convention that links the first letter to the railtype's gauge size; the second letter to its maximum allowed speed; the third letter to its maximum allowed axle weight; and the fourth letter to its electrification system, if any.

## *5. Playability notes*

### *5.1. Compatibility with other train sets*

The French Train Set was developed as a stand-alone set, with all of its parts fully integrated and designed with coherence and realism as main aims. For this reason, compatibility with other train sets has not been, neither will be in the future, a priority for this set.

Players who wish to use the French Train Set alongside other Sets are welcome to do so, but no guarantee is provided about how coherent and balanced the result will be.

## 5.2. Suggestions about how to play with the Set

Both OpenTTD and TTDPatch allow setting a few switches that alter the gameplay, affecting difficulty, vehicle behavior and availability, and infrastructure building. To get the best experience out of playing with the French Set, there is a list of recommendations as to how to turn a few of those switches.

To enhance the trains' behavior:

- *Realistic settings for curves and mountains* give a more accurate behavior to trains when driving on slopes. Curves hardly affect narrow gauge trains, because their maximum speed is usually low enough to allow them to negotiate curves at full speed. Slopes, however, play a more prominent role, and their presence will be an important factor in the engine choice for each line.
- The *freighttrains* switch also plays a role in simulating a correct behavior for trains. Setting a multiplier of 5 for them will make full freight cars heavier, therefore requiring more powerful engines, or multiple tractions, to pull long freight trains.
- *Wagon speed limits* should be enabled too. It will limit the freight trains' maximum speed, keeping things more realistic. It will also dampen the advantage of the 3-axle open wagons, which were specifically designed for mountain lines, therefore having a lower maximum speed.
- The *multibeat* switch should be enabled, with a value of 0, to prevent trains from driving faster than they should. As mentioned, multiple traction was a very common sighting in French secondary railway networks, especially on mountainous regions when the steep tracks required extra tractive power.

Then, to get the best experience in terms of vehicle availability:

- *Start year* should be set to 1882. The first two narrow gauge steamers are available in 1881, but since OpenTTD randomizes the vehicles' introduction date, starting the game one year later is always a safe choice. Initiating a game so early constitutes an interesting challenge, as the player will start with the earliest and weakest locomotives and will have to either use their ingenuity to lay tracks that avoid excessive steep slopes, or resort to multiple traction. The game will lead the player through the gradual evolution that the narrow gauge rolling stock had until the modern days.
- Turning off the *persistent engines* switch will allow for the normal cycles of introduction and obsolescence of every vehicle in the Set, and will make the playing experience more interesting and challenging. The player will start off with steamers, then gradually switching to diesel traction, using railcars and MUs for passenger hauling.

Finally, the following switches will enhance the set when it comes to infrastructure building:

- *Higher bridges* should be allowed. Many narrow gauge lines were built in impervious mountain regions, and required engineering works such as long tunnels and long-spanning bridges to reach certain areas. This switch will allow players to build realistic mountain narrow gauge networks.
- The *larger stations* switch should not be a compelling requirement for the narrow gauge part of the French Set, since most stations on those secondary lines were very small and usually had no more than two tracks. However, some railway networks had larger, more complex stations in the city they were headquartered in, so this switch could be useful to at least recreate those stations.
- The *signals on traffic side* switch should be turned *off*. In France, road traffic drives on the right, but the train traffic runs on the left (except for Alsace); therefore, if the railway signals are mounted on the road traffic sign, they will not reflect their actual position in reality.

When laying tracks, feel free to lay them directly into cities or villages. Historically, many narrow gauge lines shared the same space with rural roads, and in certain cases turned into urban tramways when

they entered towns. Although TTD doesn't allow laying railway tracks the same way as tramway tracks, having a single-track narrow gauge line running straight through the heart of a small town might be a more realistic sight that one could imagine.

Finally, keep in mind that the French narrow gauge lines were made of a single track 95% of the times. Double tracks were seen only at stations, which were the only points when trains traveling in opposite directions could cross.

If, however, there is the strong need to create a double track line, players should keep in mind that, in France, *trains run on the left!* (except for the Alsace-Lorraine region, where they run on the right, following the German standards).

## 6. *The playtesting phase*

As a preliminary test version, this GRF presents some features that are final already, as well as others that have been partly developed or still totally absent.

### 6.1. *What's there*

The locomotives (including steamers, diesels, and electrics) have all been included, as well as the passenger coaches and freight wagons. This allows the player to transport any kind of cargo provided by the original TTD industries as well as FIRS and ECS at all times in the game. All the wagons' liveries and refitting options have been included. Additionally, a limited specimen of railcars has also been included, offering an alternative to ordinary passenger trains while reducing cost.

Push-pull has been implemented for all the included vehicles, and the same scheme will be used for the future ones.

### 6.2. *What's lacking*

The French Trains set is still lacking 15 vehicles, among railbuses, railcars, and multiple units trains. They are being drawn as this readme file is being completed. They will eventually add a way to transport passengers and, in a few cases, mail at a higher speed and at lower costs. As for this playtesting phase is concerned, locomotives and wagons have to be used most of the time.

The French Rails set has still preliminary graphics. The rails themselves are very similar to the original TTD ones and will be replaced by graphics closer to the originals. However, some fixtures including depots, crossings, catenary pylons and fences are final.

### 6.3. *What to watch for*

Many points about the set will most likely have to be balanced.

Especially, the aim of a preliminary testing is to spot potential issues such as:

- Any "set killers" among the locomotives; i.e. a locomotive whose specs are just so superior to others that it dwarfs them all and becomes the only used model;
- Any useless engine that is never a good choice for any reason;
- Excessive ease in making money with the Set's trains; or, impossibility of running a profitable railway company; this also includes the track's maintenance costs;
- Unbalanced "passenger class" system, making it never profitable to carry passengers on either more luxurious or more economical classes;
- Mismatch between the freight wagons' available cargoes and what common sense might suggest;
- Vehicles getting obsolete too soon and leaving the players in the dark, without a replacement;
- General quality of graphics not at the same level as the best train sets out there (yes I *do* mean this – don't be shy to criticize me);
- Certain vehicles' graphical quality not matching the rest of the Set's;
- Mismatches or misalignments of certain vehicles, especially in curves or slopes;
- Misalignments of the narrow gauge tracks, in switches, curves or slopes;



- Incorrect or incomplete ECS and/or FIRS support;
- Any other issue that might be thought of or encountered.

The thread is the natural place where to report any problems that might be encountered. I'd love to get feedback.

Lastly, since this is still a playtesting version, there are many major parts still missing and many potential bugs. Because of this, I need to ask you to *please do not distribute any copies of the \*.GRF files as they are now*. Once the playtesting phase is over and the bugs are addressed and corrected, a public release of the French Set will be available.

## 7. Acknowledgments

The development of this Set would not have been possible without the valuable help of Michael Blunck, to whom goes my warmest gratitude for his technical help, his to-the-point suggestions, as well as his willingness to teach me and allow me to use his great "m4nfo" program, with which the French Set has been coded. The patience with which he has listened to my complicated ideas and has addressed my out-of-the-world requests has earned him my biggest appreciation!

I would also like to thank Martin Pink (aka Mart3p) for his early work in coding a very preliminary version of the Set. His suggestions helped me refine my drawing abilities. He also generously shared some graphical ideas of his, granting me permission to take inspiration from his great sprites.

*Those sprites include a few cargoes loaded on the flat wagons, recognizable as wooden crates, plywood planks, sheets of metal, cable drums, and metal coils. The basic sprites for the narrow gauge rails are also inspired by Mart3p's work on his narrow gauge tracks, while the depots, railroad crossings, catenary pylons, third rail, and tunnels are original work by myself.*

Special acknowledgments also go to (in alphabetical order), Walter Bamberger (aka Wallyweb), Loïc (aka Lt Gable), Paul Schweizer (aka The Irish), and James Vassie (aka JVassie), for our long-lasting talks and idea exchanges about the French Set. Looking forward to continuing working with all of you! And, of course, my thanks also go to everyone who's reading this and who is going to contribute to this Set's completion through playtesting, bug hunting and, more than anything else, constructive yet merciless *criticism*!

## 8. Copyright notes

Permission to use this software (consisting of the graphics and its implementation code) and its documentation for non-commercial purposes, without fee and without a signed licensing agreement, is hereby granted. Contact the above Copyright holder for distributing this software, or for commercial licensing opportunities.

IN NO EVENT SHALL THE COPYRIGHT HOLDER BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, LOSS OF USE, DATA, OR PROFITS) ARISING OUT OF THE USE OF THIS SOFTWARE AND ITS DOCUMENTATION, EVEN IF THE COPYRIGHT HOLDER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE SOFTWARE AND ACCOMPANYING DOCUMENTATION, IF ANY, PROVIDED HEREUNDER IS PROVIDED "AS IS". THE COPYRIGHT HOLDER HAS NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

ALL COMMERCIAL USE OF THIS SOFTWARE IS STRICTLY PROHIBITED.

ALL REDISTRIBUTION OF THIS SOFTWARE TO OTHER PARTIES FOR COMMERCIAL USE IS STRICTLY PROHIBITED.

## 9. FAQ

- *I tried this set. It's not so bad, but the choice of vehicles is very limited. There are very few trains introduced after WW2, and basically nothing in the modern era. Also, really fast trains are totally missing, as well as strong freight haulers.*  
 Yes. This preliminary edition is just a very first draft of what the final French Set will be, and as such, it only contains part of the planned narrow gauge trains. Standard gauge is still totally missing.
- *Whatever, but this is supposed to be a set of French trains. Where are the Orient-Express, the Flèche du Nord, the TGVs?...*  
 True, those are missing, but there is still the *Flèche des Cevennes* if you want a luxury train. Just kidding! Everything will be there in due time. Have patience...
- *I can't understand why you started with those funny-looking trains hardly anyone knows of. Couldn't you include the most famous ones first instead?*  
 I'm attempting my first baby steps as a coder. Michael is greatly helping me, but I can't ask him to code the whole set for me, so I need to learn things myself in the process. Because of this, I felt it was better for me to start coding a slightly smaller, simpler trainset than the massive French Standard Gauge Trains Set I have in mind. Indeed, the French Narrow Gauge Trains Set, with its fewer vehicles and less complex cross-dependencies, is a perfect environment for me to get more familiar with m4nfo and coding in general.
- *Ok, I get it. (Sigh) Is there anything I could do to help speed up the development of this damn set?*  
 Yes! Try this preliminary version thoroughly, explore all the possibilities that come up to your mind, and then pummel me with criticism, bug reports, and suggestions about how to do better. I am myself aware this Set is far from perfect, and the more constructive criticism I get, the better I can enhance the future versions. In other words, don't be shy to hammer me!
- *Whoa, these trains of yours are really small...*  
 Of course. The Set is about narrow gauge rolling stock. What did you expect?
- *No, I mean, REALLY small. I sometimes need my magnifying glass to spot them!*  
 Well, they've been drawn in scale, so that the difference with forthcoming standard gauge rolling stock will be immediately visible (as it was in real life). Wait until you see the standard gauge trains, and then we can talk about it.
- *Man, this train set seems to be obsessed with realism. But I just want to build stuff and play my game. Is there a way I can forget about all that historical crap?*  
 Well, you don't have to build a historically correct railway network if you don't feel like. After all, every locomotive comes in a default livery: you can always stick with it and forget about refitting. Or, play with refitting until you get the variant that most pleases your eye. Think of it as graphic variety.
- *Yeah, but there are still pesky restrictions about constructing a consist, attaching wagons...*  
 True. But usually, the engines' default liveries are those that allow the most freedom in consist building. You should be ok if you stick to them. And you can always safely attach two or more engines of the same type to form a multiple traction train if you don't use refits. Unless you try to create consists that seem to come from the outer space, you should be OK.
- *But other train sets allow much more freedom!*  
 So what?
- *But even the original TTD allowed me to build any consist I wanted!*  
 So what?

- But...*  
This is how I see it. Moreover, leaving some constraints that enforce a bit of realism helps giving some slower engines a real chance, since players won't always be able to go for the "fastest, most powerful" available engine all the time.
- Dude, what's your problem? Did you watch too many Japanese cartoons when you were a kid or something?*  
As they say in France, I'm a rivet counter (*compteur de rivets*). Deal with it. :p  
  
(by the way, no one could ever beat *Captain Tsubasa*...)
- Hey, I spotted a bug! Engine X appears weird in conditions Y and Z.*  
Excellent! Make sure you post it on the thread. I'll be happy to have a look at it and correct it. (If only I could hear these words more often...)
- This engine's livery appears weird. And I don't really like the graphics of that EMU.*  
Okay, so why don't you post that on the thread as well? If the graphics can be enhanced, I'd be more than willing to go back to the drawing board.
- Nice train set here, but the lack of standard gauge vehicles is really a drag. When do you think the standard gauge rolling stock will be released?*  
Well, as everyone else, I've got a day job too. This is just a fun hobby of mine. As such, I can't really promise anything in terms of timing, other than the fact that it *will* be released, some time in the future.
- How about including vehicle X in the set?*  
The vehicle list has been designed to provide a good balance between variety and playability. Some engines or railcars have been left out because of various reasons: limited added value to the Set; too strong similarity to other vehicles already included; low number of units built historically; or gauge other than metric. Usually, if a vehicle didn't make it to the Set, it was a combination of all these. But if you still think some vehicle deserves to be there, you're more than welcome to post in the thread. Chances are that it might be something already planned but still undrawn.
- I actually think this set contains way too many vehicles... if you put so many narrow gauge trains, what will we see in the standard gauge set? A list that it takes hours to scroll through?*  
Well, sometimes I come across interesting engines or railcars, and I can't resist the temptation to draw them. If you think there are too many vehicles, you can just stick to those you prefer.
- I'm trying to use your rackrail steamer, but I can't really find a way to make it useful. It's way slower and more expensive compared to the other rolling stock.*  
Yes, this is true. Unluckily, for rackrail engines to be really useful in the game, we'd need to have slopes with different degrees of steepness. This way, rackrail engines would be the only ones capable of climbing the steepest hills. However, OpenTTD is designed as to only have slopes of the same steepness, so we have to live with this.  
The rackrail engine's very limited max speed is actually already "too" high: historically, the engine included in the Set drove at 8 km/h when using the rack. Moreover, its TE can't be boosted above the limit imposed by its weight. Finally, due to the delicate and complex system of traction through pinions, the rackrail engine's purchase and maintenance costs need to be above average. OpenTTD itself is unluckily not suitable for rackrail engines.
- You're talking garbage. I've got an idea that will make rackrail really useful in a game!*  
Seriously? I've tried to think about other possible solutions, but to no avail. If you think you've got a better solution that gives rackrail engines a true advantage and preserves historical correctness, while not breaking any other aspect of the game in the meantime, I'd be more than happy to hear it. Feel free to post on the thread.  
Just, "raise the slope steepness for all trains to 10%" won't be taken as an answer, because such a solution would seriously affect all of the other trains in a game.

- *I'm playing this set together with XYZ Set, and am noticing major mismatches in terms of prices / running costs / capacities. Why is the French Set so misaligned?*

Interesting question. Although my aim is *not* to make a trainset to be played with foreign sets, if the quantities here are so not in line with other important, well-developed sets out there, it's more than likely that the French Set requires extra balancing. Don't hesitate to report such a discrepancy on the thread!

- *Can I play with this set together with tracksets other than the French one you also released? I don't really like it.*

Well, in TTDPatch you'll *have* to use other kinds of tracks, simply because extra railtypes are not supported. Corenlius/Mart3p's original narrow gauge rails are fully supported by the French Train Set, when playing with TTDPatch.

Also, the Set has a specific parameter that disallows the use of the French Rails Set. When set to "on", the narrow gauge trains in this set will always appear as regular (electrified or not) trains, to be used on the RAIL and ELRL track types.

On the other hand, the French Trains Set is *not* compatible with the "Narrow Gauge Track Types" set. The main reason is that the latter still doesn't provide support for 3<sup>rd</sup> rail or rackrail tracks.

- *I have the opposite problem. I like your tracks, but I couldn't care less about your trains. Is there a way I can use this trackset with other sets' narrow gauge rolling stock?*

Well, not at the moment, but there is hope. The French Rails Set's railtype labeling system is shared with other Sets, so it is more than likely that trains with those Sets will be able to run on the French Rails as well.

- *Hey, I can recognize my graphics there! You stole my sprites!*

Jeez, I really hope I didn't... All of my graphics are original, except for a few cargoes on top of the flatcars, which were inspired by Mart3p's graphics for his industrial station set, and the basic narrow gauge tracks, also inspired by Mart3p's narrow gauge set; he gave me permission to use his sprites as a base. In any case, those tracks will *not* be part of the final set, because I'm planning to replace them with graphics matching the originals more closely. As for the other graphics, if it's too close to yours, we can definitely talk about it. If some of your artwork ended up in this Set without your permission, don't hesitate to post it on the thread.