



Trainsimming Modern French Railways

Part Three March 2003



Pierre Gauriat's superb model of the MI79 (Z 8100) used on the RER lines A and B by the SNCF and the RATP (Paris transit authority)

In Part Three:

- **Coach classification**
- **Express carriages**
- **Suburban carriages**
- **EMUs**
- **Railcars and DMUs**
- **Resources**

In Part three, the concluding part, we look at the SNCF carriage stock, both express, Paris suburban and regional, as well as EMUs, DMUs and rail-cars in use today.

In contrast to locomotives, main line express carriages they have been very few major changes in color schemes.

Carriages were Green, and it is only with the advent of the Corail carriages in 1975, in their white and gray scheme with coral doors was there some color, which lasted until a gray scheme was introduced in 1995.

INOX (stainless steel) replaced the green on the Paris suburban routes; then came the red, white and blue scheme of the Ile de France for non stainless steel carriages and EMUs.

In contrast DMUs and railcars were always more colorful in red and cream, later in mid blue and gray.

With the advent of the regions financing local services and stock, both Regional carriage stock, EMUs and DMUs became more colorful, with their Regional colors.

French Passenger Wagon Classification system

The SNCF uses the following classification system:

Capital letter showing type + plus number of compartments (or equivalent in seats), plus small letters showing sub classifications + the overall series type

A10tu VTU 1st class, 54 places (6x9 places) coach (t), climatized of the Corail (VTU) series.

B9 C9 x UIC Second class, 9 compartment, 9 couchette compartments, Crew Chiefs compartment of the UIC series.

ZBD + ZRB + ZRB + ZABx 2nd Class motor car with baggage compartment + 2nd class trailer
+ 2nd class trailer + 1st/2nd class trailer with driving cab.

A	1 st class (or part)
B	2nd class (or part)
C	Heating wagon
D	Baggage car (or part)
S	Salon or special car
DD	Car transporter
P	Postal wagon (or part)
PA	Mobile Post office sorting
PE	Mobile Post Wagon (non sorting)
VL	Sleeping car (voiture-lits)
VR	Restaurant car (Voiture restaurant)
X	Diesel EMU or Autorail
Y	Small shunter (Locotracteurs)
Z	Electric EMU (Automotrice électrique)
XR	DMU trailer
ZR	EMU trailer

(a)	Without two or three axel bogies
c	Compartments transformable into couchettes (+ the number of compartments)
d	With a customs luggage wagon
(e)	Double deck
f	Suitable for France-GB traffic
(i)	With no inter-circulation
(j)	In stainless steel
(k)	Lacks a constituent element (for example a WC)
(l)	Speaker system meeting UIC requirements
o	Ambulance
(p)	With inter-circulation passage without bellows
q	Non metallic of non metallized coachwork
r	With restauration area
s	Lateral corridor (Compartment)
t	Central corridor (Coach / open plan)
u	Air conditioning
x	Special arrangement (particular a Compartment of the Conductor "Chef de bord")
(y)	Automatic coupling
z	No Hand brake

Plus a number representing the number of compartments (or the equivalent at 6 places for first class and 8 places for second).

The letters in () not shown on the coach



A pre war carriage built for the Ouest, by Baume et Merpent in 1922, and metallized 1951/1952. Model: vh24

SNCF Passenger Wagon Park

At the creation of the SNCF it inherited a carriage park of some 39,000 wagons, of which only 5000 were metal, or metallized. The first priority was to metallize the wagons, and some 6000 were metallized up to 1968. It also purchased some 11,600 new wagons between 1948 and

1994 (excluding TGVs). The last pre war coaches were withdrawn in 1990.

Those built since the war are:

Name	Type	Number	Number Built	Number in Passenger Service 2000
DEV AO/INOX	Express	1948 -1973	2001	0
USI (aka DEV SI)	Express	1962 -1974	803	487
UIC	Express	1963 -1976	1319	701
Corail VTU, VU and VSE	Express	1975 -1999	3886	3726
TEE	Express	1963 -1974	239	0
Restaurant Cars	Express	1966 -1973	100	21 inc converted to club or space.
Sleeping cars	Express	1973 -1976	100	99 + 10 leased
VB 2N, VO 2N, VR 2N	Suburban/Regional Double deck	1979-1987	750	747
V2N	Suburban/Regional Double-deck	1991-1994	151	151
RIB/RIO	Suburban/Regional	1961-1984	1066	937
RRR	Suburban/Regional	1985-1994	434	434
Dd	Baggage Car	1954, 1964/1980	470	36
DD	Car Transporters	1967 – 1968, 1983	200	200

Numbers from La Vie du Rail (see resources). Included those owned by the regions.

Corail



A BB 7200 leading Corail A10tu, B11tu Corail plus, and two B11tu's form the Train 5958 Le Cevenot From Marseilles 14 June 2002. Train consist from www.simtrain-fr.org. Corail carriages from Olivier Grognet.

The largest class of express passenger stock, in extensive use in France. (Not all routes are TGV!)

Corail stands for **C**Onfort sur **R**AIL, and is also French for coral and Coral pink, and the Coral pink doors reinforce the branding. When they were introduced in 1975 they brought a new level of comfort for second class passengers, with air conditioning – previously only available to first class passengers in trains using the luxury TEE carriages - and also carriages capable of going at 200 km/h compared to the 140 – 160 km/h second class passengers had to put up with.

They were SNCF's response to losing their market to cars on the motorway network and the growing internal air travel. The class exists in three major variations

VTU: Open plan (Coach) with 2335 built from 1975 to 1987 seating 58 first class or 80 second class

VU: Compartment 1451 were built between 1975 and 1989, based on the standard European class. The later ones were longer to fit in the same number of seats in the second-class compartment, as in the second-class open, and are known as “**Super large**”.

VSE: Voiture Standard Européen – the standard European carriage that were financed for six European rail administrations by Eurofima. The SNCF has 100 A9u, as it was already building the VU compartment stock.

Only some are equipped to go at 200km/h, the others are limited to 160km/h

The VU main sub varieties are couchettes, with part of the wagon having a baggage car, and with a driving cab for push pull trains (B6 Dux VU).

The VTU exist with a bar (B5 rtux VTU), with a small service area for food/drinks, and with children's play area, and with a larger

restaurant area, and some have been transformed and have been modified with reclining seats, but not designated as couchettes.

From 1995 to 1998 the SNCF refurbished some stock, in particular to include chemical toilets, and also introduced the silver and gray **Corail plus** scheme. 710 were refurbished, when the SNCF decided that it was too expensive, and a further 1000 have had a lesser refurbishment and repainted in a slightly different scheme called **New Corail** (with the door entirely painted in one color in the New Corail, whereas half of it is in silver gray in Corail plus).

From 1990 the Regions have paid to have Corail carriages refurbished for use on **TER** trains. The interior design of these trains depends on the Region financing the change, but all have the gray TER scheme, with the logo of the Region.



An ex-Corail in the Rhone-Alpes TER scheme, found on TER from Lyon to Savoie. Most of these trains are push pull with a driving cab.

Model Olivier Grognet Repaint Concorde



A Corail couchette in its midnight blue and white livery. The Yellow band above the window means First class. (Green for second class.)

Model Sylium (Payware)

Corail Schemes

Corail	White with dark gray window band and Coral colored doors
Corail Plus/ new Corail From 1985	Metallic gray with dark gray window band. Doors half painted in the TGV Atlantique colors (Turquoise 2 nd , Red 1 st , yellow Bar). Door fully painted in New Corail
TER	Metallic gray with large TER and a log for the Region
Couchette	White with midnight blue window band
Eurofirma Orange	11 VSE painted in the Orange color of Eurofirma to match the Belgium coaches. Now repainted in standard Corail livery
TER 200 (Alsace) From 1991 Fedora Paris Strasburg in the 80's Interloire (The Loire) Aqualys (Paris –Tours) – From Nov 1999	Specific schemes



B6 Dux VU Corail Driving Cab. Model Mr. Rokko Reskin Stéphane Herrent / Henri Verpiot

UIC

The next largest class of carriages is the **UIC**, named after the **Union Internationale des chemins de fer**, who in 1961 defined the parameters for carriages used for cross border work. The SNCF decided to build carriages for the longer type Y (The other is Type X), and built 1319 between 1960 and 1971. They are all capable

travel at 160 km/hr, and some at 200 km/h.

Originally used for fast express trains, including the Capitole, where the carriages were painted red, they were replaced by the 'Grand Conforts' or by the Corail. They are all compartmental, with mechanical suspension and no climatisation, with the

characteristic folding door, also seen on the Corail, called the Mielich door. Also available in Couchette, and baggage compartment versions. They are still 700 in use, with the largest proportion of the survivors being couchettes. Now used on Military trains and in the regions. Can be seen on Skiing trains to Savoie

Standard	Green until 1971 then green with gray window band. The gray changed to a lighter color during the period.
Couchette	Midnight blue with gray window band (some green/gray)
Capitole (From 1967 and 70's)	Red with white band
Wasteels (Private sleeping cars)	As Couchette with Orange doors
FTS (Private sleeping cars)	Orange with gray window band



A BB26000 pulling UIC stock eventually to Evian (Etoile de Savoie) Feb 2000. UIC Model Edouard Staniczek. (Actually these are in Period IV livery, the gray should be lighter and the SNCF logo is different).



UIC Couchettes at St Gervais (Etoile de Savoie). You can see the Mielich doors

Model Sylium (Payware)

USI

The **USI, Unifié de service interior** - unified (compared to the regional stock inherited by the SNCF) for internal service. Also know as **ANF**, for their manufacturer Atelier de construction du Nord de la France, or **DEV SI**, (Division des études de voitures - Carriage Research division).

These were the coach (open plan) carriages, and in fact the first

purpose built open plan, although others had been converted since the war into this format.

ANF built 803 between 1962 and 1974. The top speed is 140 km/h or 160 km/h, depending on the bogie. Variants have mixed open and compartment layouts (particular for first class compartments). They are now just used on regional routes, and only 490 exist.

In 1998 the Center region refurbished 20 carriages, which are in the Metallic gray TER livery, and are used on the Paris - Orleans route. However they do not have air conditioning.

The colors were originally Green, then green with an aluminum band, later changed to gray.



Another Ski-train: USI Coaches on an Evian – Paris ski train Feb 2001. The BB 25100 was actually in the Béton Livery, rather than the one here.

Model Carriages: Pierre Gauriat

DEV AO and DEV INOX

The first post war wagons, designed by the Division des études de Voitures et Wagons (DEVW) – the Wagon Research Division, in two styles **AO Acier ordinaire** – ordinary steel, or

Acier inoxydable – stainless steel, with short and long wheel bases. Compartment coaches, developed from a pre war Est design, they ran on fast express trains, including named trains, but the AO were

withdrawn by 1990, the INOX in 1996, and the AO couchette in 1997.

There is no model available

TEE INOX and Grand Confort

The **TEE** carriages were luxury First class carriages with air conditioning built from 1961 to 1974, with the first delivered in 1964 to replace the diesel TEE on the newly electrified Paris Brussels Amsterdam Route. The First 36 were **INOX**, (stainless steel) and equipped the **Etoile du Nord** and other trains on this route (11 were owned by the SNCB).

I traveled on the Etoile du Nord, and it is one of the highlights of train traveling.

A further 122 (6 for SNCB) were ordered for Interior routes equipping the Mistral, the Paris-Ruhr, the Lyonnais and the Rhodanien, and later the Cisalpin, the Memling and the Rubens.

From 1967 the **TEE Grand Confort** were built, which had painted bodies, equipping initially the Capitole. The Orange red livery is matched on those CC 65000 and BB 15000 in the Grand Confort livery.

Some coached were turned into second class in the early 80's

From 1990 to 1993 some were converted into intercity coaches "**Euroaffaires**", with an Eggplant and metallic gray livery, used on special trains from Paris to Strasbourg, Luxemburg and Toulouse (ie non TGV Routes).

By 1999, all of these coaches had been withdrawn for commercial service, replaced by the TGV or Corail plus.



The **Etoile du Nord**, with the TEE INOX carriages, and the CC 40100 four system Electric loco. Models Bruno Terrien and Edouard Staniczek



TEE Grand Confort carriages, with the nose of the matching BB 15000 in the same livery.

Model Sebastien Belluteau

Suburban and Regional Carriages

RIB, RIO and RRR

RIB means **Rames Inox de Banlieu** Stainless steel suburban trains, **RIO** is **Rames Inox de omnibus**, Stainless steel regional trains, and **RRR** is **Rames réversibles régionaux** – Regional reversing trains. They are all push-pull train sets, with a driving cab.

Their distinctive feature is that they are made out of stainless steel, similar to carriages for the EMU's of the same period. In 1960 the first RIB, RIB 60, was ordered, hence the name, built for trains out of the Gare du Nord following electrification, with additional ones later for the Gare de L'Est. The

RIB 60 has now been withdrawn, or significantly altered to RIO 60/88. RIOs have better/less dense seating than RIBs.

The RIBs and the RIOs were then bought either for the SNCF, or financed by the regions. Each series has some variation/improvements, particularly to the suspension, cab design and controls, the series type is designated by the year of their first ordering, ie RIB 70. Different versions can work with DC locomotives only, others dual voltage and/or diesel.

The RRR, with a slanted front, are a more modern version ordered by the SNCF or by the regions, with 434 vehicles were delivered between 1986 and 1986 in regional or outer suburban versions. They can be joined with RIB or RIOs. Some of the Regional ones have been renovated, and some RIOs rebuilt with the RRR front.

The window band are in the livery of the region concerned, for example PACA is Turquoise blue, Picardie Vermillion Green, Nord Pas de Calais is Yellow.

RIO 80 PACA seen between Marseilles and Nice. Model Bruno Astorg who has other versions of RIOs and RIBs.



VB 2N, VO 2N VR 2N and V 2N

These are all double deck cars. The État railway introduced double deck cars in its suburban services in 1930, and some were adopted for use with electric trains from Montparnasse, remaining in use until 1983. Faced with the saturation on suburban lines the SNCF reintroduced double deck cars with the first set going into service in 1975 from Paris St. Lazare.

The **VB2N Voiture Banlieu à Deux Niveaux** is the Double deck suburban stock. 100 were ordered in 1979 and 10 in 1998. They have a driving cab and run in consists of eight or four, with a push-pull

locomotive. However the locos may not be powerful enough for the role. Some cars were used to lengthen Z5600 EMUs.

The **VO 2N** with the O for Omnibus built from 1980 and 81 has individual seats, and luggage racks for outer suburban serves. 110 were built. The Centre region has refurbished some

The **VR 2N** with the R for regional. The Nord Pas de Calais bought 51 between 1983 and 1986.

The **V 2N** was built much later, and are designed for longer distance journeys out of Paris, and

can go at 160km/h, compared to the others 140 km/h., and have comfort levels equivalent to the Corail. 151 were built between 1991 and 1994.

The VB 2N and VO 2N originally had an orange and gray scheme, now changed to the Ile de France red, white and blue scheme. The VO 2Ns refurbished by the Center region have the TER metallic gray scheme. The V 2N a white scheme with a large navy blue skirt and light blue doors. The VR 2N has an Ile de France scheme, but with yellow replacing the red.



A VB 2N with the driving cab in the Ile de France livery, and the rest of the train in the older orange livery.

Repaint of Swiss Re 450. ??.

Specialist carriages

Sleeping Cars.

Sleeping car trains in Europe were a virtual monopoly of the **Compagnie Internationale des Wagons Lits** (CIWLT). However faced with the need to renew their fleet they withdrew from the market and from 1972 the European railways set up the 'TEN' Trans Euro Night pool for international services, and set up a national park. These leased the wagons from Wagons Lits and built new wagons. The SNCF leased or took had built new or built two types of Sleeping Cars. The TEN pool has now broken up.

MU Moderne Universelle with 12 compartments useable as single, double or tourist. The SNCF has 21 (3 leased from CIWLT)

T2 Touriste 2 Places, with 18 twin compartments, on two levels, to increase the capacity. The lower compartments can also be used as single-bed "Special" compartment. The SNCF has 88, 7 leased from CIWLT



A T2 sleeping car, showing the windows for the twin level compartments. Model Sylium (payware). No model of the MU available.

Restaurant cars

Restaurant cars were run until 1962 by CIWLT, when because of Financial difficulties the SNCF took over the service, and the Wagon Lits cars, which were retired in 1978. The SNCF built

between 1962 and 1968 42 restaurant cars, based on the DEV AO chassis. However because of declining demand, the TGV and the Corail restaurant cars, many have been converted into Children

spaces, Club cars (10) or retired. There are only 5 Restaurant cars left.

58 Grill express were also built, as DEV AO's, of which six are left.



VRU DEV AO Restaurant car Model Sylium (Payware)

Ambulance cars 'SO'

The SNCF has 27 Ambulance cars, type **SO**, based on the Corail VU type, built between in three stage between

1976 and 1983, and used mainly to transport pilgrims (for example to Lourdes)



Model: Pellé Christian

Post Wagons



La Poste PE UIC 74 – Built between 1974 and 1980, and converted from sorting, to carrying packages. La Poste has ten left.

Model Sylium (payware)

La Poste still twenty wagons like this (painted in yellow and white like the one above), converted just to carry packages, rather than sort them, with sliding doors. Model Bruno Terrien, who is doing a yellow and white version.



Baggage cars

The SNCF built between 1964 and 1980 420 Baggage cars, to replace prewar wagons. However, only 36 of the **Type MC 76** are still in passenger service, of which two

have been modified to transport horses. 57 others of this type and the DEV type are used as service vehicles.

Car transporters

Overnight car transporters, and day transporters is a declining market in Europe. The SNCF has 50 of the **DD standard**, built in 1983 shown below, and 150 of the **DD DEV 66** built between 1967 -68, used behind day and night auto trains.

STVA, a partly owned SNCF subsidiary transporting new cars has 229 **type TA 260** (European code Lekss)



DD Standard SNCF Car transporters. Model Sylium.



TA 260 STVA car transporters.

These now have a metal mesh type side to protect the cars from vandals etc.

Model Bruno Terrien

Z EMUs Automotrice électrique

With rare exceptions, until the Z2 twenty years ago EMUs were designed for the Paris suburban routes and then cascaded out to the provinces when replaced by new equipment. The characteristics of SNCF suburban EMUs are

stainless steel single stock, or (normally painted) double-deck stock.

Paris suburban trains had first class up to September 1999, when it was withdrawn for a number of

reasons, one being these compartments attracted the most delinquency and vandalism. All sets were originally two man operated, and many remain this way.

Name/Reference	DC	AC	Dual-voltage	Notes
Inox 3 or 4 cars		Z 5300		Paris suburban, originally out of Paris Austerlitz and Paris Lyon, now Montparnasse and Paris Lyon. Some now used for TER work around Orleans and Tours (Centre region)
Inox 3 car sets	Z 6100			Paris suburban from Paris Nord as far as Amiens
Inox 3 car sets		Z 6300		Originally suburban out of Paris St Lazare; now local services out of Metz, Reims and Amiens
4-car set. The last stainless steel	Z 6400			Suburban Paris out of St Lazare
MI 79/84 RER			Z 8100	Used by SNCF and RATP on Lines A and B of the RER
Z2N Double deck		Z 5600	Z 8800 Z 20500 Z 9250	Z 5600 Six car sets out of Paris Lyon Z5600/Z 8000 on RER C Z 20500 is an updated version with air-conditioning, also used on RER D. The Z 9250 has lower density seating and is used around Lille
			Z 22500	An updated Z 20500 for RER line E, and for the RATP on line A
Z1 Regional cars	Z7100			A single car pulling up to 2 trailers
Z2 Regional 2 car sets	Z 7300 Z 7500	Z 11500	Z 9500 Z 9600	
TER 2N			Z 23500	New Double deck sets used for Regional stopping services

INOX

The process for producing stainless steel, trains (INOX in French) was developed by the Budd company in America, and first used in France by the État in 1937 (Z 23700) for two car sets on the newly electrified line out of Paris Montparnasse (They were withdrawn in 1985).

The SNCF used the INOX system in 1954 for train sets on the newly electrified lines out of the Gare de Lyon (Z 5100 withdrawn in 1998).

The next series was the Z 5300 in 1965, with a second class driving

motor, two trailers and a driving cab. Three sets can be joined together. They were used on Line C of the RER, and are being withdrawn, and displaced sets are in turn displacing RIB locomotive hauled stock at Montparnasse, or used around Orléans and Tours.

The later Z 6100 (1965 –71) are 25kV AC three car units operating out of Paris Nord, as far as Amiens. Still in use.

Z 6300 are also 3 car 25kV AC units built for routes out of Paris St Lazare, replacing the third rail

Standard stock as the line was updated with overhead catenaries. Now being withdrawn, and just used for peak or late night, with some in the provinces

The last single deck stock, except for the MI79 for the RER, was the Z 6400, built between 1976 and 1979, originally for use out of the Gare du Nord to Roissy, and then when this became part of the RER used out of Paris St Lazare. They are a four car set with two power cars, and the window-band is painted mid blue. They are currently being refurbished.



A Z5300. These retired from service on RER C this year, but will see life in the provinces.

Model: Claude Jousset



A Z6100 in current livery. First class was removed on Paris trains in September 1999.

Model: Bruno Astorg

Class:	Z 5300	Z 6100	Z 6300	Z 6400
	ZBD + ZRB + + ZRB + ZABx	ZBD + ZRB + ZABx	ZBD + ZRB + ZABx	ZAD + ZRB + ZRB +ZBD
Number Built:	5301 -5445	6101 - 6184	6301 - 6335	6401 - 6549
In Use	138	75	33	150
Built:	1965 -68, 72 - 75	1965 -71	1967 - 70	1976 -79
Voltage:	1500 V DC	25 kV AC	25 kV AC	25 kV AC
Speed:	130 Km/h	120 Km/h	120 Km/h	120 km/hr
Color	Inox	Inox	Inox	Inox with mid blue window bands.

The MI 79 (Z8100)

The outer lines of the original RER Line A were handed over to the RATP (Paris transit authority), and they already ran the southern part of what became Line B. These lines were electrified at 1500 V DC. When it was decided to extend

these lines onto existing SNCF lines running at 25 kV AC there was a need for a dual voltage EMU. The result was what the RATP call **MI 79 Matériel Interconnexion 1979** (the year it was delivered), or a later version

MI 84, which just runs on line A. The four car sets have adjustable steps for the different platform heights on the route. The RATP have 142 sets and the SNCF 51.



Another view of the MI 79 (Z8100). Model Pierre Gauriat.

Z 2N

To meet the demands and the service, and based on the success of the double-deck locomotive hauled stock the SNCF decided to buy double deck EMU for Line C of the RER and for suburban routes out of the Gare de Lyon, called **Z 2N** Double deck EMU (Deux Niveaux). The original was the 1500V DC **Z5600**, and later the

dual current **Z8800**. Only the latter can work north of the Seine. The Z5600 sets comprise two motor coaches and two to four trailers depending on the route, the Z8800 are four car sets.

The **Z20500** is a development of the Z8800 used for RER D, and also Line C. They have a more

angular appearance, and also have two different types of trailers, one being longer than the other, and are in four or five car sets.

A variation is the **Z 92500** used around Lille.



A Z5600 used on the Paris RER Line C. RER trains have a Mission code – this one is MONA - which is also shown on timetables. This is Montigny-Beauchamp to Massy-Palaiseau – the first letter shows the terminus – I think the rest makes up a memorable name. The C, which you can just read on the nose, means Current Continue (DC). Model Edouard Staniczek (with superb sounds by Belphegor)



A Z 20500 in the Transilien brand launched in 2000 for the SNCF suburban routes in the Ile de France. Transilien Transport and Francilien, a habitant of the Ile de France. The A on the nose means Aysnchrone (Asynchronous)

Model Sébastien Neri; Carriages Théophile Alary & Marc Brice

Z 22500

A new design built for the new Line E, and also to expand capacity on the RATP line A, with three large doors on each side, of which only the two outer serve the upper deck, to increase dwell time at stations. There is no air conditioning except for the driver. Technically the electrics are spread

through the train, and the composition is R+M+R+M+R.

In the RATP sets, which it calls M12N Matériel Interconnexion à Deux Niveaux), you can access from all doors and there are less seats.

TER 2N Z 23500

This is a two car double-deck EMU for regional TER services, with a leap in passenger comfort including air-conditioning. Because it is now almost as cheap to have dual voltage as single voltage units they are all dual voltage. Used amongst others on PACA.

Class:	Z 5600	Z 8800	Z 20500	Z 22500	Z 92050
	ZB + ZRB + (+ ZRB) ZRAB + (ZRB) + ZB	ZB + ZRB + (+ ZRB) ZRAB + (ZRB) + ZB	ZB + ZRB + ZRAB (+ ZRB) + ZB	ZRBx + ZB + ZRB +ZAB + ZRBx	ZB + ZRB + ZRAB + ZB
Number Built:	5601 - 5703	8801 -8915	20501 -20951	Z 22501 - 22606	92051 - 92061
Built:	1983 - 85	1986 -88	1988 -87	1997 -2000	1996
Voltage:	1500 V DC	Dual	Dual	Dual	Dual
Speed:	140 Km/h	140 Km/h	140 Km/h	140 km/hr	140 Km/h
Engine			Asynchronous	Asynchronous	Asynchronous
Color	Ile de France	Ile de France	Ile de France	Class specific white with blue stripes, and a red stripe on top of the doors.	Ile de France with yellow replacing red

Z1 Z7100

A single power car designed for use in Southeast France on 1500V DC lines, with up two loose trailer cars, and based in Lyons and Avignon. Built between 1960 and 1962. Refurbished in 1985 when they changed their red

cream color to a blue and gray scheme. At this time they also lost their intermediate trailer. Now being replaced by TER 2Ns.

Z2



Two Z9500 Dual voltage Z2s at Annecy. Model Henri Verpiot

Traditionally, with very few exceptions the regions either had hand me downs EMUs from Paris, or used Autocars and DMUs under the catenaries. When the Z2 arrived at the Bordeaux depot in 1980 it was their first new material since 1937.

With the coming of the TGV the SNCF decided to improve their offer to the clientele, and designed an EMU with a relatively high level of comfort, known as the **Z2** family, the 2 referring it to fact that it is a 2 car set.

The Z2 is available in 1500V DC, 25kV AC, and Dual voltage versions, with two different seating arrangements, Omnibus and Express. They are currently being refurbished, and are generally well regarded, except for their narrow doors, and high step.

Once the regions took a financial role in providing local services they asked that the units be painted to reflect this. The original units were navy blue with red noses: the regions were offered white with either yellow, red, blue or parrot green (only Brittany chose this)

window bands and noses. The regions chose one color, except for Rhone Alpes, which originally had red, then chose Isabelle blue, which was not offered originally. This region now also has yellow ones, and you can see sets joined together with each set in a different color. The newly refurbished ones have the TER metallic gray livery.

The placing of the pantograph and the size of the housing on the roof distinguish the different versions. The Luxembourg railways CFL also has Z2s

	1500 DV	25V AC	Dual Voltage
Omnibus	Z7301-7373 Z97381 -97384	Z 11501 -11522	Z9501-9518 Z99581 -99582
Express	Z7501-7515		Z9601-9636
Built	1980 - 85	1986 - 87	1982 -83 (Z9500) 1984 -87 (Z9600)
Speed	160 km/h		

Diesels

As a result of the **Plan Freycinet**, which financed the construction of branch lines to every town in France with a prefecture or sub-prefecture, by WW I France had a large network of little used branch lines. After WWI Motor car manufacturers, for example Renault and Bugatti, developed on their own initiative rail cars, which were used on these

branches. Following the formation of the SNCF in 1938, many of the lines were closed, or used for freight only, but rail cars continued to be built for the other lines. Some lines are run by the departments, or are preserved.

Many rail cars had a central driving position elevated above the passengers, thus having only one

set of controls. This made the French practice of using the rail car with a trailer more manageable, although the practice of having a rail car + trailer + railcar, was also common.

The X 3800 Railcar, because of the shape of the cabin on the roof, was known as the Picasso, have now been withdrawn.

Class:	X 2100	X 2200	No photo available
Number	2101 -	2201 -	
Built:	2150	2257	
Built:	1980-83	1985 -88	
Trans:	Hydr.	Hydr.	
Speed:	140 km/h	140 km/h	
Multi:	To 3	To 3	
Number in Use:	49	56	
Color schemes:	6100: Originally Blue/gray, now white with Region colors 6200: Originally Red and white, with the red replaced by the Region color. The latest refurbishments are in the TER metallic gray scheme.		
Single railcars, the X 220 having a modified interior. Used around Toulouse, Brittany. Massif central, Tours and the Nice – Cuneo line. Can be used together or with trailers in up to 3-vehicle set.			

Class:	X 2720	No photo available
Number	2721 - 2747	
Built:		
Built:	1955 -56	
Trans:	Hydr.	
Speed:	140 Km/h	
Multi:	To 3	
Number in Use:	14	
Use:	Know as RGP Rames à Grand Parcours (Long distance trains), the class includes former TEE units, that were refurbished in 1984 –92, as well as original ones. As the name indicates used on relatively long distant routes, Nimes - Clermont Ferrand (a very scenic route); Lyon - St Claude and Valance – Chambéry. In the process of being replaced by newer units.	
Color schemes:	Now in white plus the departmental colors.	

Class:	X 2800
Number	2801 -
Built:	2919
Built:	1957 -62
Trans:	Hydraulic
Speed:	120 /140
Multi:	To 3
In use	51
Color schemes:	Red/cream
	Blue/Lt
	Blue



These single car sets have been refurbished in the eighties when they took on the two-tone blue scheme, shown above. Previously they were red and cream. They are known as Massif Central sets, although they also work in the Jura. 15 have been modified to work at 140 Km/h around Clermont. They are in the process of being replaced by the newer X TER and A TER, although the ones adapted for 140 km/hr will probably continue in service. They can be work with the X 2100, X 2200, and the trailers XR 6000 and XR 6200.

X 2800 Model: Bruno Terrien

Caravelles



An X 4750 in the classic red and cream color. Model Edouard Staniczek (His first model)

The **Caravelle** is a large family of 2-car DMUs, with the first built in 1961, with later version built up to 1981. Some of the earlier ones have been extensively refurbished; some including new cabs, similar to the RRRs, with one large and

one small window. Others are being withdrawn. They are to be found on non-electrified lines in France.

The first types were the **X 4300** and **X 4500**, which are similar

except for the engine and the seating arrangements, built from 1963 to 70.

They have mechanical transmission, and the later **X 4630**

have hydraulic transmission and were built from 1974 – 78.

The last type the **X 4750** has a more powerful engine and a 140

km/h speed, compared to 120 Km/h. Its sister the **X 4970** is similar but with lower density seating. 3 extra sets were created out of Postal trains.

The **X 4900** is a three-car version of the X 4630 used on the Rouen-Cannes-Rennes route, and Caen-Tours.

Class:	X 4300/ X 4500	X 4630	X 4750	X 4790	X 4900
Number Built:	4301 – 4451 4501 - 4626	4630 - 4744	4750 - 4803	4790 - 4796	4901 - 4926
Set	XBD + XRABx	XBD + XRABx	XBD + XRABx	XBD + XRABx	XBD + XRAB + XBD
Built:	1963 -70	1974 -78	1977 -78	1980 -81	1975 - 77
Transmission:	Mechanical	Hydraulic	Hydraulic	Hydraulic	Hydraulic
Speed:	120 km/h	120 km/H	140 Km/h	140 Km/h	140 Km/h
Multi:	To 3	To 3	To 3	To 3	To 3
Number in Use:	128	113	44	10	26
Color schemes:	Red/cream Regional	Red/cream TER Regional	Orange/gray Blue/gray Regional	Orange/gray Blue/gray Regional	Blue/gray


Class:	XR 6000	XR 6200	
Number Built:	6001 - 6170	6201 - 6225	
Built:	1978 98	1988 -90	
Use:	Trailers, with driving cabs, designed to go with X2100, X2200, X2800		
Color schemes:	As Rail cars		

Class:	X 72500
Number Built:	X 72501 –X 72734
Built:	1997 -
Trans:	Hydraulic
Speed:	160 Km/h
Multi:	Yes
Color	TER



Known as the **X TER** (Automoteur) TER this is a two or three car DMU, with high comfort levels and air conditioning, for semi-fast services out of Paris Austerlitz to Tours, and in the regions

Model: DJ Seb

Class:	X 73500	
Number	X 73501 –	
Built:	X 73803	
Built:	1999 -	
Trans:	Hydraulic	
Speed:	140 km/h	
Multi:	Up to 3	
Color	TER	
Known as the A TER (Autorail TER), this is a single rail car, relatively light, that has been developed in conjunction with DB (German railways), for operation on lightly used lines, with the SNCF buying 40, and the regions buying the remainder. Can be used in multi units		
Model: Benjamin Deville (beta)		

Resources

The major references consulted were:

www.train-rail.com (In French). A veritable multimedia encyclopedia of French trains with full side plates of paint schemes, photos and videos – highly recommended even if you don't read French. However, not all engines and EMU/DMUs are on.

Georges Mathieu *Le Matériel remorqué voyageurs de la SNCF La vie du Rail 2000*. The vehicles in use at 2000 are taken from here.

The Savoie shots are based on photos at www.railsavoie.org

MSTS Sites

French MSTS sites are fragmented, with many modelers maintaining their own sites. You should be able to find most models through these three sites of on www.train-sim.com

Simtrain www.simtrain-fr.org

Mc Cob's site www.trainsimfrance.net

Le Train simulator Francais <http://www.simtrain.dyndns.org/french/depot.htm>

Funtrain <http://funtrain.fr.st/>

Pierre Gauriat has a page on his site listing all original French material <http://ajtrainsim.free.fr/materfr.htm>