

# UIC-Y Coaches from Lima's "Shorty"



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## Background

The *Union Internationale des Chemins de fer* (UIC) was founded in 1922 with the aim of creating uniform conditions for the establishment and operation of railways. The UIC's scope expanded to include preparing standards, regulations, and recommendations to facilitate international traffic.

Over the years, the UIC commissioned the design of several types of rolling stock along standard lines. By building rolling stock to standard designs (and using standard parts), the various European railway administrations have successfully eased the maintenance problems of having cars in international service.

Two of the UIC's early passenger car designs were the UIC-X and UIC-Y families of coaches, *couchettes* (sleeperettes), and baggage cars. The most prominent car spotting features are the smooth sides, rounded roof, and simple tubular diaphragms. The more numerous UIC-X cars are 26.4 meters in length while the UIC-Y is almost 2 meters shorter at 24.5m.

During 1963-64, the Italian State Railways (FS; Ferrovie dello Stato) took delivery of 24 UIC-Y cars in the following configurations:

Qty	Type	Original Number UIC Number	1 <sup>st</sup> Class Capacity	2 <sup>nd</sup> Class Capacity
20	Az	23.780~799 5083 19-78 400~419	9 compartments 54 passengers	-

Qty	Type	Original Number UIC Number	1 <sup>st</sup> Class Capacity	2 <sup>nd</sup> Class Capacity
1	ABz	64.799 5083 39-78 400	4 compartments 24 passengers	5 compartments 40 passengers
1	Bz	45.799 5083 20-70 400	-	10 compartments 80 passengers
1	AcBcz <i>Couquette</i>	64.499 5083 44-70 400	4 compartments 24 passengers	5 compartments 40 passengers
1	Bz <i>Couquette</i>	33.899 5083 59-78 400	-	9 compartments 72 passengers
Note that both <i>Couquette</i> cars had a tenth compartment for the attendant.				

Figure 1 - UIC-Y Coaches on the FS

All 24 cars are equipped with fluorescent lighting, steam and electric (train line) heating, two restrooms, and 24Au-series bogies rated for speeds of up to 160 kilometers per hour.

Note that the second digit of the UIC number being '0' indicates that these cars were not used in international service. The predominance of 1st class cars should not be a deterrent to modeling since the FS often declassifies older 1st class cars to 2nd class service. This is done by sticking a paper notification with a large number '2' in the door window and often in each compartment window.

### The Model

During most of its time in the N scale marketplace, Lima produced five different styles of UIC passenger car. Though mistaken for UIC-X cars, all of these models were what we would call "shorties" as they measured barely 140mm in length rather than the prototypically correct 165mm:

1. Postal Car – Based loosely on an Italian prototype UIC-X car;
2. Baggage Car – Based loosely on a German UIC-X design;
3. Coach with Baggage compartment – based on a French UIC-Y variation;
4. Coach with 12 compartments – pretty much a fantasy model in DB markings only;
5. Coach with 10 compartments – relatively rare model cataloged in DB markings only;
6. Coach with 9 compartments – fairly common model that appeared in several paint schemes; Lima indiscriminately marked these as both 1<sup>st</sup> and 2<sup>nd</sup> class cars.



Figure 2 - Lima's 9-compartment Coach in Early (above) and Late (below) Paint

Oddly, only the postal car and the 9-compartment coach were produced in FS markings. It's interesting to note that the models have what appear to be double end doors with small round porthole windows as well as rectangular roof vents. Both of these features are characteristic of the UIC-Y cars, seeming to indicate that these shorter cars served as Lima's inspiration when developing these models. Another telltale sign is the football-shaped logo on the upper car in Figure 2; this early scheme was applied to some of the UIC-Y coaches when they first appeared in gray paint. It was soon replaced by the 'television' logo seen on the lower coach.

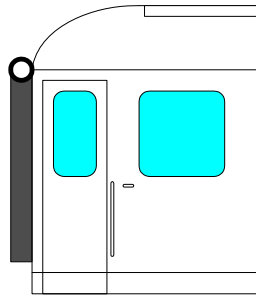
For our purposes, the 9-compartment coach is the most useful *and the most plentiful*. Even though the model is a bit too short to be totally accurate, it can be used to model the FS's twenty Az First Class coaches and their lone ABz mixed class coach. You can also model the one Bz Second Class coach and the one Bcz Second Class *Couchette* starting with the 10-compartment model. Another plus is that Lima's bogies appear to be the same type (24 Au) as used on the prototype.

The window arrangement of the mixed-class UIC-Y *couchette* car is quite different from the others and can only be constructed by major modifications to the Lima model.

By way of preface, the steps described below will transform the Lima model into a reasonable representation of a UIC-Y car, but not a contest-quality model. Unlike the North American scene, the level of interest in documenting European rolling stock is fairly low. The Italian magazine *iTreni* carried a good article on these cars and did include some helpful drawings of one side of each car, but I am forced to rely on what details can be discerned from those drawings and a handful of photos published in the modeling press. If new material becomes available, I will update my models and this article.

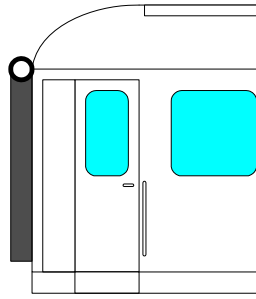
As with all how-to articles, read this one a couple of times before beginning and modify the sequence of steps to fit your particular situation. And don't forget: "Measure twice; cut once," not the other way around!

## Major Surgery: Optional



The Lima model is actually some 13mm too short to accurately represent the UIC-Y car ( $24500\text{mm} \div 160 \approx 153\text{mm}$ ). Close examination of the area around the vestibule doors reveals that the area between the door and the corner of the car is not accurately represented.

As modeled, the door is approximately 3mm wide. In reality, another panel perhaps 300mm wide (~2mm in N) flanks the door. This panel is hinged along both edges and creates a bi-fold door that opens to reveal a doorway some 800mm wide into the coach's vestibule.



Another way to gauge this is to look at the curvature of the roof as it approaches the car end. On the prototype, the roof curve starts at a point just about even with the inboard edge of the door. On the model, the curvature starts well inboard of the door.

The way to fix this (and gain perhaps 6mm of missing length) is to add the missing panel and a corresponding amount to the roof and the underframe at each end. For best results, do this as a 'Z' cut by cutting down through the roof to the top of the sides. To minimize the joint, make this cut even

with the outboard edge of the raised roof panel.

With the underframe removed, make the cut along the outboard (hinge) edge of the door from the bottom of the car up to the top of the side. Connect the two cuts across the top of the door, reposition the cut piece and fill the gaps with styrene. You'll have to do some filling of the resulting seams on the roof, but not on the side panel.

Lengthen the underframe by cutting and splicing just outboard of the vestibule doors.

## Roof Ventilators

Unlike the UIC-X, which before air conditioning had flush mount aerodynamic roof vents, the UIC-Y had prominent vents of the same design as used on the earlier Series 1959 coaches. To my knowledge, no one makes these as spare parts so I searched for a suitable substitute among the HO scale details at my local hobby shop. I finally settled on Detail Associates #VT1902 Flat Air Vent costing \$1.00 for a set of eight.

To mount them, drill a #70 hole squarely in the middle of each of the square pads that represent the roof vents. Cut the Detail Associates vent from the sprue leaving a bit of the 'stem' to serve as a mounting tab. Apply plastic cement to the stem and insert it into the hole until the vent sits flush on the pad, aligning the vent with the long edge perpendicular to the length of the coach.

## Paint and Decals

It appears that most if not all of the coaches were delivered in the FS's brown 'Castano' scheme. Within a couple of years, the brown was changed to slate grey. Later, the silver area on the roof was expanded. Ultimately, many of these cars received the light grey and liver-red stripe scheme.



Figure 3 – ABz 64.799 in original Castano livery (HO scale)



Figure 4 – Bz 45.799 in gray with early 'football' FS logo (HO scale)



Figure 5 - Az in later 'Rosso Fegato' paint (HO scale)

A good match for the FS Slate Grey is Southern Pacific Lark Dark Grey

Paint the diaphragms a dark rubber color. If you're feeling real talented with your pin vise and tiny twist drill, make a hole through the top horizontal piece of diaphragm. The real thing is made from a rubber tube and is open from end to end.

### The Windows

Perhaps the most obvious shortcoming of the Lima model is its lack of flush-mounted windows, but this can be remedied quite easily. Remove the one-piece window casting from the body and using a pair of flush cutting pliers (rail nippers work well) cut each window away from the supporting structure. Cut first at each side of the window then trim the top and the bottom. Snip the corners away at a 45-degree angle and finish up with a couple of strokes of a jeweler's file to round the corners.

Install the windows individually using Microscale's *Micro Krystal Klear* or artist's gloss medium to hold each piece in place. Position each window just a bit inboard of the car side and even all around. Apply the glue from the inside; any slop will dry clear and be invisible from the outside of the car.

The smaller windows at each end of the compartment side of the coach denote the location of the two rest rooms. Before installing, paint the inside of these windows white to duplicate the look of the frosted privacy glass installed in those openings. Do not paint the corresponding windows on the corridor side of the coach. (Hint: the compartment side of the coach is the side nearest the off-center roof vents.) Add pull-down shades to some of the compartment and corridor windows with a simple application of masking tape to the inside of the glass.

## **Bogies and Couplers**

As mentioned previously, Lima's bogies are a good match for the prototype. They come with the typical bogie-mounted couplers. If you lengthen the underframe, you will find that the stock couplers no longer project far enough to engage the coupler on the adjacent car – how you deal with this is up to you – one option is to find a longer shank Rapido coupler and install it in the lima bogie. My personal preference is for close coupling mechanisms, which allow the distance between cars to increase on curves but bring the cars almost buffer-to-buffer for greater realism on the straightaway. The easiest way to retrofit the Lima car for close coupling is to adopt the Fleischmann solution and install their *Profi* close coupling mechanism at each end.

Because of the close proximity of the bogies and the large wheel flanges, it may be necessary to cut a hole in the underframe to mount the Fleischmann mechanism (this may not be required if you elect to lengthen the car as described above). Follow the package instructions and use the positioning tool to determine the correct mounting location.

Unfortunately, Lima's quality control on their wheelsets was pretty much non-existent. There's a good chance you will find at least one wheel that wobbles. Most European N scale has longer axles than found on North American models, so substituting MicroTrains or Precision Masters wheelsets is not an option here. I've recently discovered a German modeler who makes replacement N scale wheelsets in a variety of wheel diameter and axle lengths to fit virtually every application. He routinely sells on eBay.de under the moniker 'benno002' or you can contact him directly at:

Bernd Thomschke  
Elsterwerdaer Str. 11  
01990 Kleinkmehlen, Germany  
Tel 49+35755 51717

## **Details and Reassembly**

If you've opted for a body-mount coupler solution, you can add the missing step below the vestibule doors. This is best accomplished with a couple of pieces of fine brass or bronze wire and a bit of shim stock or thin styrene. If you use brass shim stock, you can solder the assembly, bend the wires, and mount the step after drilling a couple of holes in the underside.

At each end of the car, there is a cable that connects to a receptacle on the adjoining car to carry the train heating power and other electrical services. Looking at the end of the car, this cable is attached below the right-hand buffer and when not in use hangs by its connector from a hook mounted above and outboard of the buffer. The corresponding receptacle is mounted below the left-hand buffer.

Make the power cables by stripping all but about 1/16" of insulation from a 1/2" length of solid strand wire (Hint: it's easier to strip the wire and then rethread a short piece of insulation on one end). Attach the insulation with rubber cement or CA. At a point approximately two-thirds from the insulated end, bend a 180-degree loop in the wire so that it looks like an upside down question mark. Paint the insulation silver and the bare wire a rubber color.

Drill a hole on the underside of the car in the position described. Mount the cable with a drop of CA adhesive. Position the connector on the car end and attach it with a drop of adhesive. You

may want to do this only on the end car, since the connections would be made (and therefore not as visible) on all other cars in the train.

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