



Emerald Night

The definitive system

By lluisgib

Pictures by lluisgib and LEGO® System A/S

Set: Emerald Night

Number Set: 10194

Number of bricks: 1085

Includes: Steam locomotive with tender, passenger car, 3 minifigs, Battery, Motor, Remote Control, Infrared Receiver, lights, flexible tracks.

Recommended Price: Locomotive: € 89.95, Kit Power Functions: € 151.70, Flexible Train Track (64 sections): € 29.95

Ever since 9V trains disappeared, adult fans and especially fans of trains have been eager to see the launch of a new a train system that could convincingly "replace" this system.

There was a first attempt, launching the RC train, but the use of batteries and several specific parts (like the base / IR receiver / holder) resulted in only 2 LEGO® RC train sets appearing (an ICE passenger train and a cargo train) and the introduction of train tracks without the characteristic metallic top to carry electricity.

These trains opened the way to the train system that LEGO has recently launched, the Power Functions Train System. It takes advantage of the RC track system (mechanically compatible with the 9V tracks) and adds some new accessories that make the system more versatile.

Emerald Night

Behind this evocative name lies an excellent design, perfect to entice AFOLs to introduce the new system. A steam locomotive with a 2-3-1 wheel arrangement (Whyte notation), a tender and one passenger coach.

Starting with the aesthetics, the first thing that stands out is that the Engine is not designed just in black, a colour we see in many steam engines. In this case they have used the "other" typical colour scheme, dark green decorated with golden details, which makes the engine much more attractive than a black one.

The chimney is built on the front part (smoke box), and it is based on a black radar dish, 6 studs wide, which is the size of the boiler. Only the smoke box is



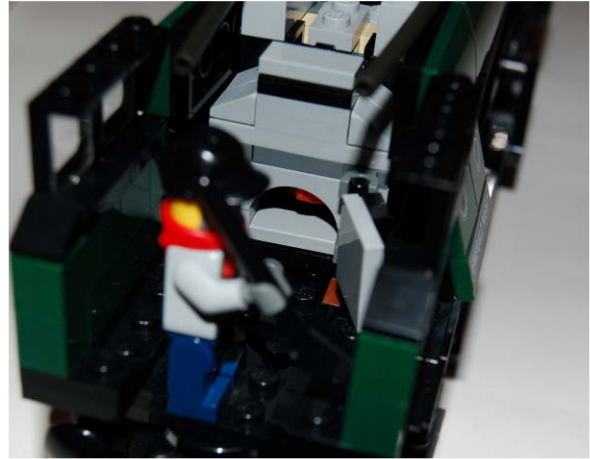
black, and the rest of the boiler is green. It has two lights to illuminate the track, one in the middle of the radar dish and the other at the top, right in front of the Chimney. There are also two front wings on top to channel the air, and the chimney, which is a car rim. At the bottom are the pistons and their corresponding protections. Below the pistons there are two driver axes.

In the central part of the engine, we find the boiler and the driving axles. The boiler is built with Slopes curved 2 x 4 x 2. In addition there are some rigid tubes (Hoses) in pearl grey, simulating water pipes. These hoses fill the space between the upper part of the vertical slope and the side of the horizontal slope.

The slopes have two silk-screened golden bands, whereas the rest of the decoration of the train is done with stickers. It is appreciated that they have decided to print this particular part. If stickers had been used there, the result would have been very untidy and irregular, because it is very difficult to place the stickers perfectly. This way is very clean and the result is spectacular.

Right in the centre, there is a section that is not done with these curved slopes. This part is detachable and is prepared to accommodate the infra-red receiver. Later we will take a look at the adaptation of the motor and other Power Functions components. The driving axles are in this middle section. The





gears that perform the multiplication (1 turn of the motor equals 2 turns of the axle) are inside the firebox. The wheels are new and have a groove to place a rubber to avoid them slipping on the track. There is a curious detail. Talking about the three axles, only the rear axle is the one which receives the power of the motor. The front axle gets traction through the coupling rods. The centrepiece, though it receives movement of the rods, is just decorative. Because of the size of wheels, if the designer had added a real third wheel, the engine should be longer. So there is a piece that is just a "rim" that moves together with the rest of the axles, but has no direct contact with the tracks.

At the rear part of the engine is the cab. Inside is the door where driver throws coal on the burner. When you open the door, there is a flame that simulates the fire. They have also added the detail of the shovel for the coal. There is also two side windows and the rear axle. There is no window in the front of the cabin, so the driver cannot see where he is going. But in order to have a compact design and keep everything well proportioned it should be in this way.

The tender has a proper design and size. It has 4 axles, to carry the weight of the coal, or in our case,

to accommodate the battery. Interesting details are the door to access the coal from the engine, and the red light at the rear, along with a ladder to reach the top.

The wagon is very appealing. Done in tan and brown, it has a very consistent design compared with the design of the locomotive. The first detail to emphasize is that the doors of the wagon are made with standard parts, rather than a typical train door. The way to open the doors is very original, using Modified Bricks 1 x 1 with Handle and Modified bricks 1 x 1 with Clip Vertical. In this way the hinge is very well integrated into the vehicle. The interior is well detailed. There is a chest of drawers with two drawers and two sets of two chairs and a table. Between one of the chairs and chest of drawers, and between two chairs of different tables, there is a gap to leave a suitcase. A passenger and the ticket collector are included in the wagon.

The external decoration is done with reddish brown and tan plates and tricks. Only a few small stickers are added to indicate the type of wagon. Several options are included on the sticker sheet so you can make it a first, second or third class wagon and with various number references. The roof is also



studless, built with slopes curved 2 x 2 x 4 grey with grey tiles and black round tiles. Like most LEGO® trains, it is possible to open the roof, which allows access to the inside of the wagon. In this train, The LEGO Company has launched the new magnetic couplings that comply with the new European Union regulations. The magnet is inside a receptacle, and it is not possible to handle it. However, the power of the coupling is perfect.

The Power Functions System

The Emerald Night has been used to introduce the new Power Functions system for train control. This new system provides a standardized system of trains, avoiding the use of specific parts, which are sometimes difficult to handle for a compact or striking design.

The main system is made up of 6 elements:

- * Power Functions Motor XL
- * Remote control
- * Infrared Receiver
- * Light
- * Battery
- * Battery Charger

Both the XL Power Functions motor and the IR receiver, are the same as used, for example, in the Bulldozer. This motor stands out for its high torque, and with a suitable multiplication, you get a remarkable speed and force. The Light is also the same that has been used in previous Technic models.

The remote control is new. It has two round actuators, and two emergency stop buttons. The

round actuators control the two outputs of the infrared receiver. To start the train, we must turn the control in one or the other direction. A complete turn of the actuator has 21 positions. Each time you make a change in its position, the engine speed changes, increasing or decreasing to one of the 7 speed. The use of control is a bit awkward, but in the enter a Technic axle and another part to facilitate this action can be placed. The remote control has 4 channels, and you can control up to 8 trains from a single command.

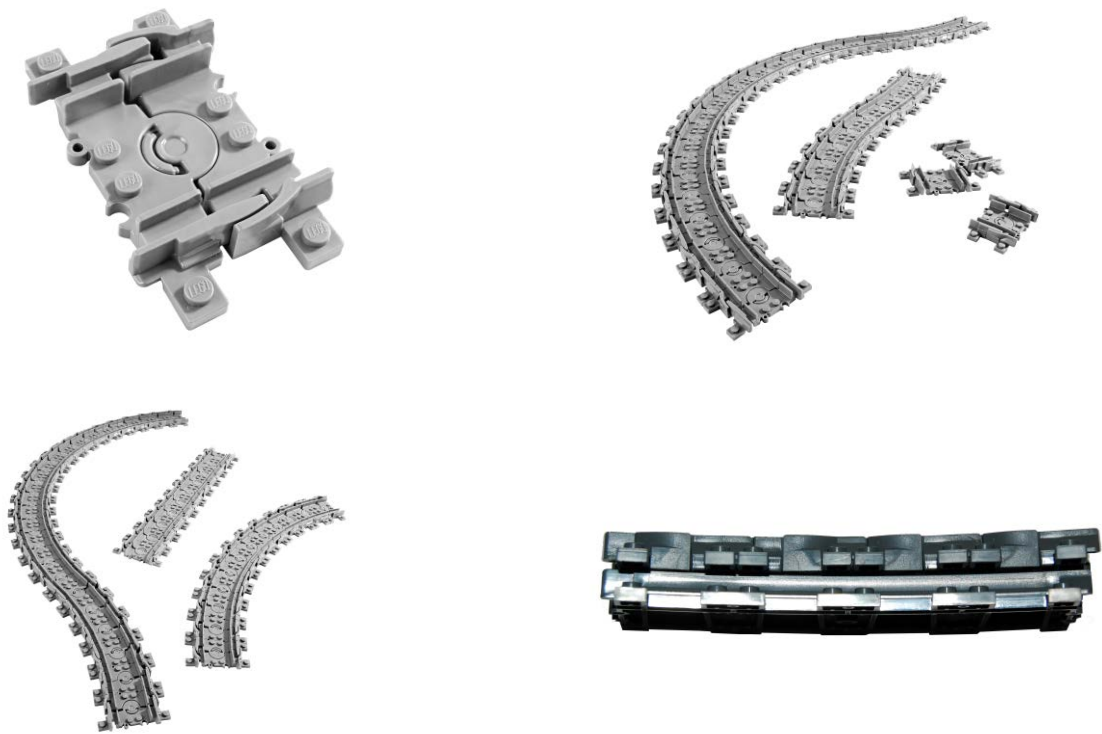
The other big novelty is the battery (with charger). Its size is 8 x 4 studs and 3 bricks high. At the top there is the connector for the battery charger, a switch to activate / stop the battery, a Power Functions connector (motor, lights, etc. ...), and two LEDs, one indicating that the battery is in operation mode and one charging indicator. There is also a control where you can insert a Technic axle, which lets you run a PF element connected to the battery.

The function of the battery is double. On the one side it is a battery which gives power, for example, to the IR receiver that controls the train. On the other side it has a control to act autonomously. In the case of a GBC module, the battery can control the operating speed of the module.

Flexible Train Track

More new possibilities come with the rail system: the introduction of the Flexible Train Track (FTT). This system is designed to make circuits more versatile without being limited by the radius of curvature of the current RC tracks (the same radius as 9V).

The system consists of small track sections, which are 4 studs long. Four track sections are equivalent



to a standard straight track. The minimum radius is equal to the RC track radius.

The power of this system is not the correspondence with the current straights or curves, but the range of possibilities it opens for circuits with different radius of curvature and with minor modifications in the layout. This was not possible with the system of straights and curves of fixed size.

The FTT also has its cons. In this case it appears when the locomotive runs through the area of FTT. It moves slightly more and more abrupt. To make the tracks flexible, there are areas where the track is discontinuous to allow the rotation of the track. It is in these areas where the engine vibrates a bit and runs a little louder.

Moreover, the length of the tracks, in comparison with fixed is not perfect. In the case of the straight sections, 4 FTT has a perfectly equivalency to a fixed track. In the case of the curve, the length is somewhat larger (2 millimeters), but accumulating sections of track, that lag can be several millimeters longer, which can make a circuit that does not fit perfectly. Many tests should be carried out with many circuits to establish a "standard" installation of this kind of tracks, and to fit perfectly with the fixed tranche.

The set

The building instructions of the Emerald Night, have a special section that shows how to update the engine to the PF system. It is very clever how some parts have been used to perform this adaptation. When the motor is mounted, it is surprising to see how some of the parts are built. They are a bit peculiar and leave you the question "Why has the

designer done this in this way?" When you are installing the motor, you understand it. They have tried to minimize surplus parts and have preferred a construction a bit more complex in parts, which are then removed and used to put in the Power Functions elements..

The motor is placed in the driver's cab. You have to remove the burner and add two technic pins. The axis of traction is built into the locomotive and is concealed when not in use. The infrared receiver is positioned in the central part of the locomotive by removing a block of 4x4 studs. The lights are placed in the front. The wiring is placed through the inside of the engine and only a part of the wire is visible, the one that goes to the tender, where the battery is placed.

Operation

It is surprising how well the engine runs, even at the slower speed. The use of motor XL is a guarantee that the engine will always run correctly and does not suffer from lack of strength.

The testing circuit (video on our blog www.hispabrickmagazine.com) shows that even at the lowest speed, it can to negotiate any circuit it finds. The maximum speed is not too high.

As I said earlier, the use of the control is somewhat uncomfortable, but some bricks can be added to facilitate such action. The reception is good in all positions. The approximate distance from which you can drive the train is about 10 meters. It is more than enough distance for a home layout, but something short for large displays. In addition, I am a bit afraid about the increasing use of Power Functions systems, with the mixture of infrared information. In



the coming months we will see if there are any problem at LUG events.

Conclusions

With the launch of Emerald Night, Power Functions Train System and Flexible Train Track, LEGO® welcomes us to the future of trains. A future that is presented with great expectations and hopes of the new Power Functions accessories that may emerge in the coming years.

The locomotive is simply spectacular. SNOT, dark green with gold ornaments, neutral design ... The car is very beautiful, and the fact that all ornaments are made with bricks and no stickers give a bonus for quality. Why not a box of loose wagons?

The Power Functions System is an important step in standardizing the system after the small failure of the RC system. The use of standard components for the engines opens the door to many MOCs, and locomotives that up till now were impossible

(especially steam engines, due to the inclusion of new wheels that allow the use of rods).

The Flexible Train Track is another innovation that can give a lot of playability, but has added a certain mystery, due to problems in the length of flexible tracks, and to see how different software solutions will now plan layouts with the use of a section of track with variable angle.

Will we have another system, like 12V, with lights, automatic switching tracks and other accessories, all included in the Power Functions system? Hopefully yes.

Thanks to:

Jan Beyer, LEGO® Community Development Manager for provide us this set.
LEGO Iberia SA for the official images. ■