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Anniversaries

By car_mp

It's weird how subjective the length of a year can be. Something so precisely measured, to the second, but it slips through our lives at different speeds, depending on our surrounding conditions. This magazine was born just a year ago, but it seems like it was much longer ago, and since then a lot of things have happened. Our first interview with a great builder; our first article in English; our first article written by an AFOL from outside our borders (come on guys, we're open to your ideas, wherever they come from!); our first all-English edition ... A lot of objectives were reached in just 365 days, from a project of three very excited friends to a magazine read by AFOLs from almost everywhere across the globe.

At the same time it was 10 years ago that the first Lego StarWars set saw the light of day. And it seems to me like it was just three or four years ago. Just looking through the catalogs of the first years you realize how time goes by, and how many sets and minifigs of this line have seen the light. There's no doubt that there's a turning point with this franchise for both the company and for us, not only for the fans of the movies, but also for those who are not. Nobody can deny that it brought freshness and new parts to our plastic world. And we should not forget about all our friends that have been rescued from "dark ages", attracted by the Dark Side. This special issue of Hispabrick Magazine is dedicated to all of you, and especially to those who have contributed with articles or translations during this year. Thank you very much to everyone. ∎

Carlos, one of our editors, was subtly convinced to dedicate and focus this issue on the LEGO® Star Wars™ anniversary

10th Anniversary of LEGO® Star Wars™

A fan's point of view

Text by Lumix and Spazski

Pictures by Lumix and LEGO® Iberia S.A.

With the coming of the 10th anniversary of LEGO® Star Wars™, it seemed fitting to write an article about the importance this line has had and is currently having in the LEGO universe. For that, we would like to share with all of you some of the thoughts and feelings this mythical series has inspired.

The origins.

From its début in 1977, Star Wars became a social phenomenon present in the lives of millions of people, and of course, it keeps taking us to 'a galaxy far far away'.
The LEGO community has been making MOCs of vehicles, scenes and ships inspired and based on the Star Wars universe since many years ago, even before internet became widely available for us to easily admire all the fan creations.

The many Star Wars and LEGO followers really wanted LEGO to put out a line dedicated to this incredible universe. Not only because we thought it would be a total success (as it proves to be), but also because they would make a perfect union, since imagination is one of the key points for its enjoyment.

And finally, in 1999 it happened. Taking advantage of the release of Episode I - The Phantom Menace, the LEGO Star Wars™ line was born. Now we are here, 10 years later, after many years of building, anticipation, and a great amount of emblematic models that have passed through our hands.

A really successful line.

The launch of the line was a success for LEGO, and it created a rather curious phenomenon: it made many AFOLs come out of their Dark Ages. It was to be expected, because within the LEGO community there are many fans of the saga, who of course were impatiently waiting for some of the models based on it to come out.
And the thing is that these models have something really special: they give us the chance to reproduce those ships we've piloted many times in our dreams, with our own hands (and pieces). Who hasn't imagined piloting an X-Wing™, or even imitated Darth Vader™'s breathing?

But the sets aren't successful just because they are based on Star Wars. They are usually really faithful to the original design, something that is not always easy to achieve, and gives them a plastic model feel that attracts the adult fans.
Other lines have more creative freedom, but for this line they have to stick to some already existing designs, and at the same time, they have to be playable and commercially viable. This takes us to another strong point of the line: its playability. In general the sets are "swooshable" and full of gadgets and movable parts.

Apart from that, the Star Wars sets are the ones that

have the most Technic pieces within the "non-Technic" lines. They give it a more sturdy build overall, and allow different building techniques rarely seen in other lines.

There is even a motorized set: The 10178 AT-AT™! And of course we have to talk about the UCS, which have earned their own section within this article.

The Star Wars™ sets excellently combine a well planned design that is faithful to the original designs, high playability and a huge selection of minifigs, all in a commercially attractive arrange of models. This makes the LEGO® Star Wars™ line one of the most sold in the history of LEGO, and one with the most followers, regardless of age.

According to the official figures, they have released more than 180 different products, and have sold more than 106 millions sets. In 2009, they approximately sold 28 sets per minute, 1683 per hour, 40402 daily. The most selling line after LEGO City.

And just for a little trivia, the X-Wing™ is the star of the line. Since 1999 it has been the most selling set. We should also mention that so far, the line has 275 different minifigs, and some of them are collector material.

Evolution and reeissues.

In these 10 years, LEGO has evolved overall. Not only by making new pieces, but also design and building technique wise. This has particularly happened in the LEGO Star Wars line. We've seen

the sets evolve from the early blocky designs, to the elegant and best reproduced ones from these past few years. This is all thanks to the use of the more modern pieces like the wedges (though some already existing pieces have been smoothed out) and the more extensive use of tiles, SNOT techniques, and better and more faithful color combinations (like in the TIE Fighters™).

The evolution of the sets doesn't simply end design wise. The playability has also changed. The missile shooting, for example, has evolved overall. Same goes for all the details, movable bits, and gadgets, that seem to be increasing in the later sets. Of course we shouldn't forget about the minifigs. They haven't only changed "skin-wise" (from yellow to flesh colored), but also in variety and diversity. Even the Stormtroopers™ are closer to the original design now.

The changes seem more obvious in the reeissues of some of the sets that appeared in the early years of the line. They came back with many improvements in most of the cases. Some of the examples worth mentioning are the reeissues of the MTT™, Y-Wing™, Slave I™, N1 StarFighter™ or Darth Vader's TIE™ (Celebrating the 10th anniversary of the line), along with many others.

10030 and 10179, the before and after of the UCS - Two models that changed history.

LEGO Star Wars started a very important class of sets: The UCS (Ultimate Collector's Series). Unlike the smaller and more playable commercial sets, the

UCS were made with the philosophy of being big, proportioned and as faithful as possible to the real movie models. And of course directed to the AFOL public. With the launch of the 10030, the mythical UCS Star Destroyer™, it was made clear that LEGO® also cared about the AFOL community. It was the biggest set ever released at that moment, the most detailed one, and it included uncommon building techniques. It became a hit within the history of LEGO.
After a few excellent models like the UCS X-Wing™ or the UCS Blockade Runner™, in 2007 LEGO created another hit: The Legendary 10179 - UCS Millennium Falcon™, with almost 5200 pieces (way more than the 10030), a bigger palette of colors, a fantastic attention to detail, and made in minifig scale.

The UCS were the push for LEGO to make more AFOL directed sets like the Green Grocer, Café Corner, UCS Batmobile and Taj Mahal, which are bigger and more detailed that the usual sets.

Where are we headed?

During these 10 years of LEGO Star Wars™ we've seen many sets from the Original Trilogy as well as from the new one, and during the last 2 years quite a few from the Clone Wars.
This year, LEGO is giving us a bit more of a mix putting out sets from both trilogies as well as the Clone Wars, which will probably leave us satisfied.

It seems that there will be many sets to enjoy during this year, and of course whatever is awaiting us in the future, but it is rather curious how some of the most popular ships from Star Wars don't have a LEGO version yet.
One of the most demanded ships within the AFOL community is the Calamari Cruiser, though a playset is coming out this year instead of the ship itself. Other vehicles that could be made are the Naboo Royal Cruiser™, the ship QuiGonJinn™, ObiWan™ and Amidala™ use to travel to Tatooine, the Nebulon-B frigates ™or the Rebel Cruisers from the Hoth escape... The Star Wars universe is huge, and still has a lot to offer.

May the Bricks be with you!∎
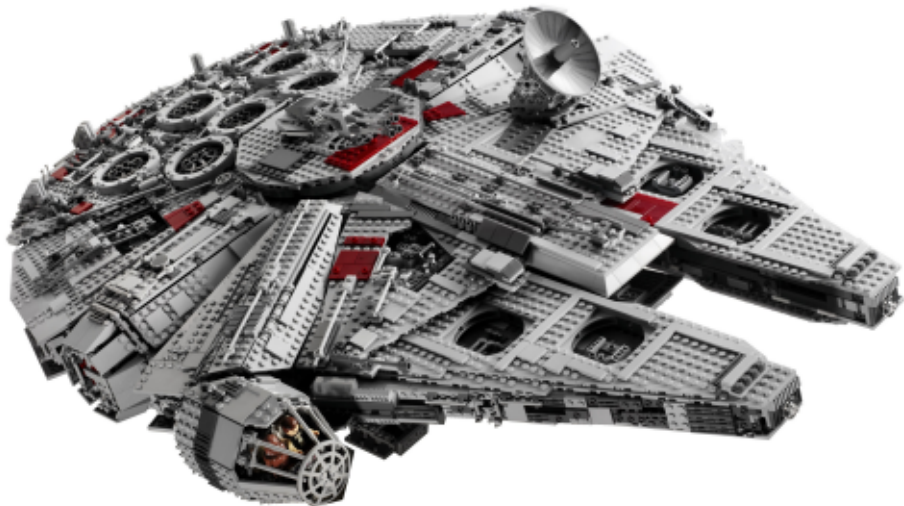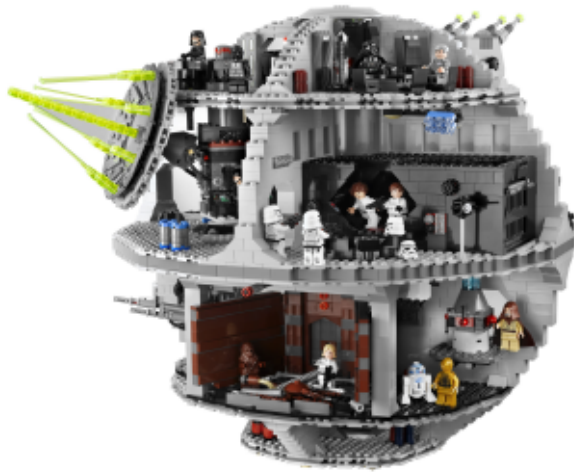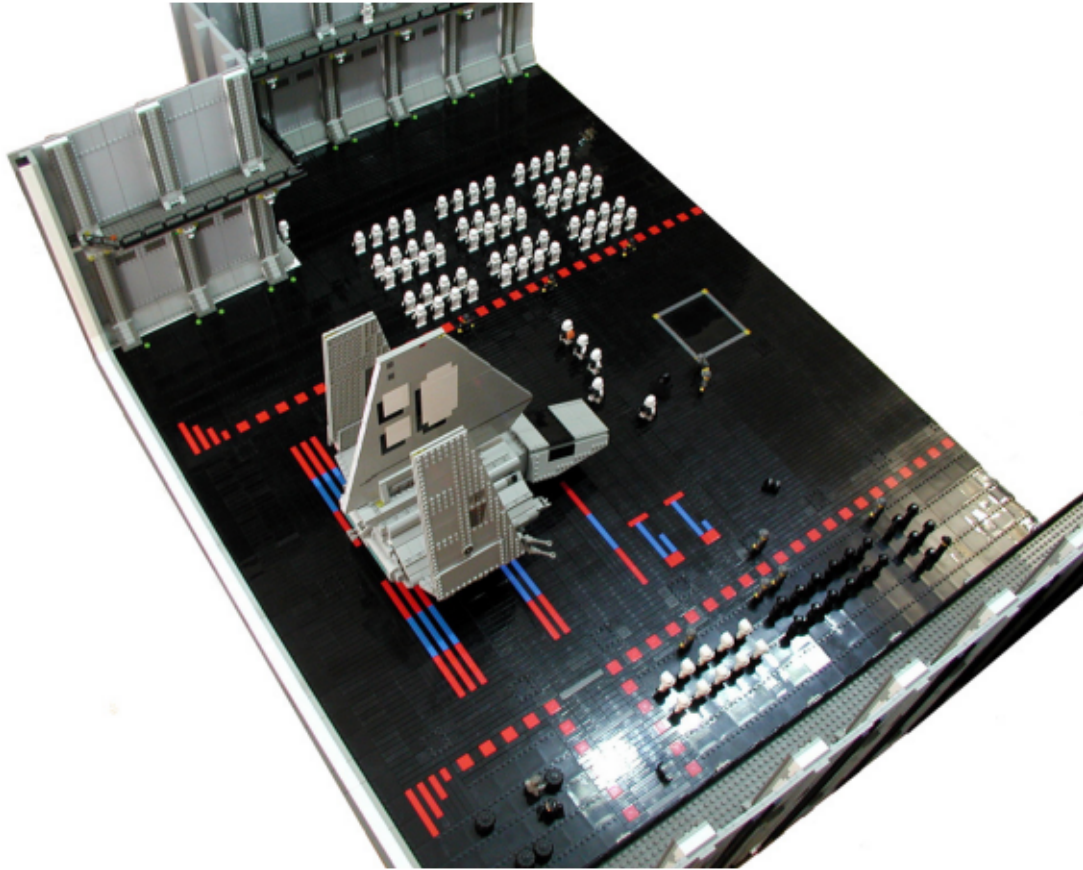
The Construction of the Imperial Hangar

There is nothing so gratifying for a LEGO® and Star Wars™ fan as the possibility of recreating some of the most famous scenes from the movies.

Text by: Legotron and pictures by Legotron and Roman Gibert

Starting point.

Like any project of a certain size, the one which is described below was born from an idea which was floating around for a long time: to build the scene of the Emperor's arrival at the Death Star™, from the film "The return of the Jedi". It could be said that there is no AFOL fan of the Original Star Wars™ Trilogy that has never considered such challenge. Having the possibility of contemplating various displays made by other AFOL increased the desire to do the same. And that was how, in 2003, the design

and the preliminaries of this project. were started. After a few months it was ripe and after deciding the main lines, in the beginning of 2004, the construction of the Imperial Hangar started.
The most important point was to adhere to my initial planning, the outlines, of which were to be followed from the very first moment, were the following:

- Build a reduced scene, based on the arriving of Lord Vader™ to his Super Imperial Destroyer, the Executor™, but with the same components, a transport ship, a hangar and a martial parade.

- Build it as accurately as possible to the scale defined by the elements, and as the central element of the display, the Lambda class Imperial Shuttle™.

- Build the whole project as a modular construction [1], which will allow the continuity and development of the construction in a very long term.

- Make initial module sketches with my PC, in order to make the acquisition of the necessary bricks for the different project elements possible.

Design preliminaries.

From the very beginning I divided the project in two different parts. On the one side was the shuttle, which was supposed to act as the central element and be the moving force of the project. And in the other side was the hangar design, set up with lots of floor and wall modules, and to be designed in accordance with the size of the shuttle. My aim was not to build an exact replica of the hangar seen in a few frames of the film, but to adapt the design to be inserted in the Star Wars theme.
To achieve continuity in time, the shuttle should be the first element to be assembled. If it didn´t look good the display would lose its most representative element and it wouldn´t have a succesful ending. For this reason, from the beginning my effort was focused on finding a design that would fulfil my expectations and be feasible technically and economically. Keeping in mind that the LEGO® shuttle, from set 7166 "Imperial Shuttle" was too small, and doesn´t look like the original model, it was necesary to start building the model from scratch.

Photo 1

The design of the secondary hangar elements was pushed to the background. Several prototypes were designed on the computer and changed as the shuttle took shape. Two different modules were designed, the floor modules using baseplates 16x32 and the wall modules, using baseplates 8x16.

Construction process.

All the construction process was divided in different stages, each of them with a specific goal that I tried to reach. As the goals were reached, new stages were started, with the design and assembly of new elements. The process of expansion has been developed over more than 5 years till today, without a defined ending point, so it´s almost sure that it will keep on growing in the following years.

Phase I - the shuttle.

The construction of the shuttle began in mid-2004. The size of the shuttle was a key issue: if too small it couldn´t be the centerpiece of the display, and if too large, would be out of scale and the cost could stop the construction. After excluding more than half a dozen designs, I began to work with the final one in the summer of 2004. With this design the first glimpse of the final size of the hangar could be seen. Knowing the final size of the Lambda shuttle was very important, because the modules of the walls should have at least the same height so as not to be out of proportion. The shuttle was made up of several modules: body, cockpit, rudder and wings, and by early 2005 both the body and the rudder were fully designed and constructed, so the construction of the first hangar modules could start. The construction of the cockpit needed numerous tests and changes to incorporate all the details and the slopes. During this process of construction, the tone of the grey bricks was changed by LEGO, which made the new parts incompatible with the old ones. Unfortunately, the shuttle was built entirely with light grey parts, and the finishing of the wings began to be a serious problem. Parts of the old color reached prices that sometimes exceeded 10 times that of the new colour, and not all the parts had their counterpart in the new color, making it critical to decide whether to continue with the old colors or change to the new gray. As a compromise the wings were built with the new colors waiting to see the evolution of availability and prices of the parts needed. So at the end of 2005 the shuttle was practically built, the only tasks left being equalizing the colors used in the model and adding a few final details.

Photo 2

Photo 3

Phase II - The first modules of the hangar.

The construction of the hangar began with the window that looks directly into space, and would grow inwards. For the first modules I started building a wall, with an end of the window module and another two or three standard modules that made up the nucleus of the hangar walls. The floor modules were the simplest part, because they consisted of baseplates covered with tiles, mostly black, which only had to follow the drawings of the other wall modules to which they were joined. Interestingly, one of the things that was changed more times during the early stages of development was the height of the wall modules. The original idea was to keep them the

same height as the shuttle, but this changed as they must be placed in their storage boxes fully assembled . After many changes I finally I decided on the design for all types of walls, after designing and building up to 14 different models. But all this work finally began to bear fruit, and in late 2005 I had 5 wall modules and the same number of floor modules. However, the problem of color change was a serious hindrance to the project. The modules were built in light gray, and some of the parts started being scarce in Bricklink [2], the main source of supply for the parts. And while it may seem odd the continuity of the project depended on a purely economic issue. Continuing with the old color was too expensive, and changin to the new gray meant having to buy all the parts again, which also was very expensive.

Phase III - Homogenizing colors.

As fate would have it, by the end of 2005 I received a proposal to show my LEGO® constructions at an event, the Collecting Fair Munguía/Mungia 2006, organized by the Bitxikiak association [3]. Around this date HispaLUG began taking its first steps in the AFOL world and it also coincided with the inauguration of the website LSWImperial [4], designed to show all my LEGO related Star Wars™ constructions. Three good reasons to speed up the project. After a couple of days, calculator in hand, doing endless costs calculations, I found the solution to the color problem. I determined that the shuttle would be completed using only light gray parts, and all the bricks with new colors would be changed with those in the wall modules. The walls would be covered with light bluish gray tiles, placed on plates of both colors to make good use of the already purchased parts. All the changes were made and everything was prepared to be transported to the fair. The exhibition was successful, and based on the comments I received, people liked the color scheme a lot. (In picture 1 you can see the wall design was not the final design). Therefore, in mid-2006 the shuttle was completed. Besides, I had the final design of the hangar walls, and a total of 5 modules available, with a dozen floor modules.
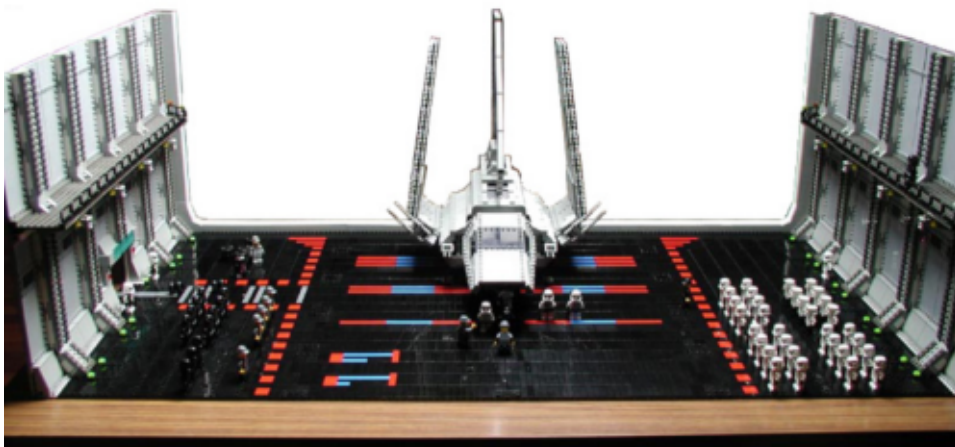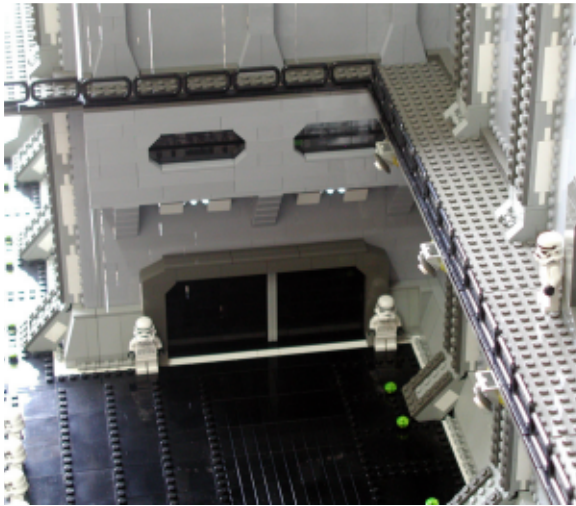

Photo 4

Photo 5

Phase IV - The exit gate.

With the shuttle completed (photo 2), I had the reference point to begin the construction of the hangar, because once the dimensions of the shuttle were know , it was easier to get an idea of the dimensions that the hangar should have. The next challenge was to finish the exit gate and complete the end of the hangar, doubling the wall modules and extending all floor modules to cover the 144 studs in width. The width of the hangar could be configured in various lengths, depending on the number of end modules built. With 4 16x32 baseplates there was enough place to deploy troops on both sides of the shuttle, bringing the whole display to life. A shopping frenzy of black tiles, modified tiles and plates light bluish grey, which lasted more than three months, resulted in a very significant expansion of the hangar (see photo 3), with 10 wall modules, meaning 80 studs of depth. The designs were made and I only needed to replicate them to increase the number of available modules till the desired amount. This phase reached an area of 144 x 80 studs with 10 wall

modules, 5 on each side of the hangar runway.

Phase V - non-standard modules.

By the end of 2006 the presentation of the project in the forum HispaLUG was planned, so I needed to include some non standard elements. The idea was to use the previous designs of the already existing modules as a starting point to make new ones with minor modifications, in order to break the monotony. The new modules would include a door for access to the upper walkway and a pipe area, with their respective floor modules. The increase of the available surface allowed more minifigs, so twenty more of them were incorporated. With the last expansion, the hangar had 12 wall modules and 24 floor modules, with a total area of 144 x 96 studs and more than 80 minifigs.

Phase VI - New additions.

The year 2007 relegated the project to the background. The great advances of the previous year and the priority of other projects meant that I didn´t have enough time and resources to continue the expansion of the hangar, at least at the level of the previous year. However, the news related to the organization of the first AFOL event in Spain, the Hispabrick [5], at which the hangar would be present, encouraged me to make a new expansion, in order to make it more spectacular for the exhibition. One of the advantages of modular construction is that you can enlarge them by simply doing nothing but building more modules. And so two new wall modules were added with their respective floor modules, which increased the size of the hangar up to 144 x 112 studs. At this point the purely logistic issues arose, related to the transport and storage of the module. So before going further, I looked for different ways to store the modules assembled, and at the same time to transport them, avoiding changing the packaging for each exhibition.
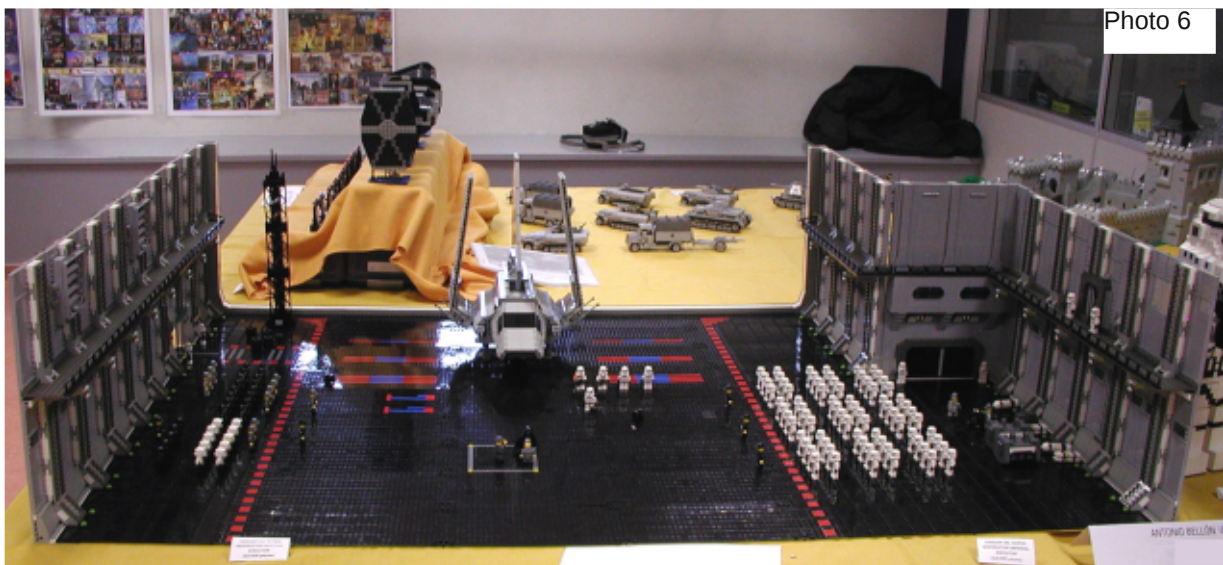

Photo 6

It should also make the enlargement process possible. As can be seen in the image (picture 4) such a volume of LEGO® elements requires some planning and organization to keep on building.

Phase VII - L-shaped extension.

The year 2008 brought new energies to the hangar. Once other ongoing projects were finished, this project became my main challenge once again. To begin with, the next public presentation was already scheduled in spring, at the 2008 Collector fair in Munguía/Mungia, which would be the deadline for this new phase. After the pause in the previous year, the construction of the display needed to speed up with new elements and ideas. I was looking for new designs to break the symmetry, so one of the sides could be used in the future for the development of completely new elements. One of the shortcomings of the hangar was the lack of modules that can display windows or large interior rooms, so I designed an entrance which included a new access to the hangar, and a new area where different cargo loading and unloading elements were placed. The new module (photo 5), besides being the largest of the whole complex, included small windows showing the interior corridor, illuminated by LED´s, and with a back opening to introduce minifigs. This meant that the width of the hangar should be increased by 32 studs, which required a large amount of black tiles in order to cover the newly created surface. By then,

the entire hangar had an area of 176 x 112 studs.

Phase VIII - The vents.

After the 2008 Collector fair at Munguía/Mungia, I had to face the Hispabrick 2008. With a big pool of black tiles, a new extension of the hangar arose as necessary, with a new background section. After the last enlargement, the interior sections consist of 2 wall and 5 floor modules, so the hangar was wide enough to grow in depth. Now it would be an expansion without any new design, duplicating one of the existing ones. Taking advantage of the bigger space available for the runway, the number of troops could also be increased, so the overall result was more compact. No doubt the more troops, the more spectacular. These last two stages of expansion resulted in a considerable increase in size, regarding the display at the previous Hispabrick. However, following some interesting proposals on the HispaLUG forum on the addition of grebbles (a technique used to create all kinds of machinery and mechanical elements) to the MOCS, I decided to make a small attempt by placing a pair of vents on the two new wall segments which I was building, so I could add a few grebbles to the hangar. And with that, the display was ready for its trip to the Hispabrick 2008. The complete set had an area of 176x128 studs and more than 100 minifigs, my biggest LEGO construction to date.

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Current status and future development.

By spring 2009 I had built more than 70 modules, with an overall surface of 208 x 144 studs, more than 13,500 parts and 120 minifigs. Looking back, the construction has been slow, but steadily growing. Having to share resources with other projects, the construction of the Imperial Hangar has been alive for over 5 years. Along its development, various problems have emerged and have been solved with enthusiasm and anticipation. As a curious detail, while I am writing this article, I still have not managed to assembly the complete hangar even once, with the assembly in the Fair Collecting Munguía / Mungia 2009 (photo 6) as the closest to reaching the complete assembly, because keep in mind that a lot of free space is needed to assemble it.

However, assuming that the small problems of such big construction have been solved, how will the hangar project be developed in the future? That is something that will be determined by many factors such as time and resources, but fundamentally by the desire to go forward. Forcing a hobby makes it an obligation, and that kills the project. Thus, while the enthusiasm lasts and there are new ideas for building, it can be consider an open project. Who knows, maybe by the time these lines see the light, there will be a new expansions on the way ...

References:

[1] Modular construction. Article in Hispabrick Magazine 001, Page. 20.
[2] Portal http://www.bricklink.com
[3] Munguia Bitxikiak collectors association. http://www.bitxikiak.org/
[4] LSWImperial, web page dedicated to LEGO® models related to the Empire. http://www.abellon.net/lswimperial
[5] www.hispabrick.com, web portal for LEGO fans in Spain.■

AT-AT™ minifig size

The gem of the Empire's land force

Text and pictures by Sigpro

Hispabrick Magazine: When did you begin with it?

Sigpro: I began with the Project in November 2007 and I finished it in March 2009.

HM: Where did you get your inspiration for the model?

S: I took my inspiration from the original LEGO® model 4483 and also other models built by others AFOLS. I also took information from many layouts I found in Internet, about cargo capacity and scales.

HM: Is there any special feature in your model?.

S: This model is not 100% exactly as it appears in the film or in many Star Wars™ books. For example:

-more soldiers can be carried.

-there is a third deck is inside, that does not appear in SW books.

-the energy generators are not inside the AT AT™ hull.

-the weapons array is different. My AT AT is fitted with 4 grenade launchers.

The model tries to be as realistic as possible, and the proportions have been kept for virtually all the different measures of the vehicle. I built it starting with the cockpit, inside of wich I wanted to have 4 minifigs inside. I also built it in order to reproduce the famous shot of General Veers ordering the Snowtrooper to attack Echo Base.

Other details are the playable neck, the cockpit hatch, the emergency hatches, lights, I've tried to make it as realistic as possible thinking about what a military vehicle looks like.

HM: What are its dimensions?

S: Its dimensions are 56 cms in height and the weight is 4 kilograms. If we did an approximate measure of its "real" height, it would be 24 meters high. This size is calculated using a stormtrooper with a height of 185 cm.
The number of pieces could be about 2000 –but I´m not exactly sure.
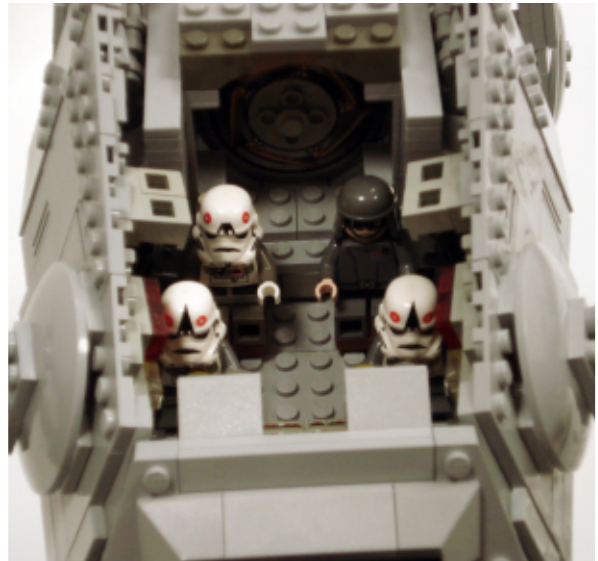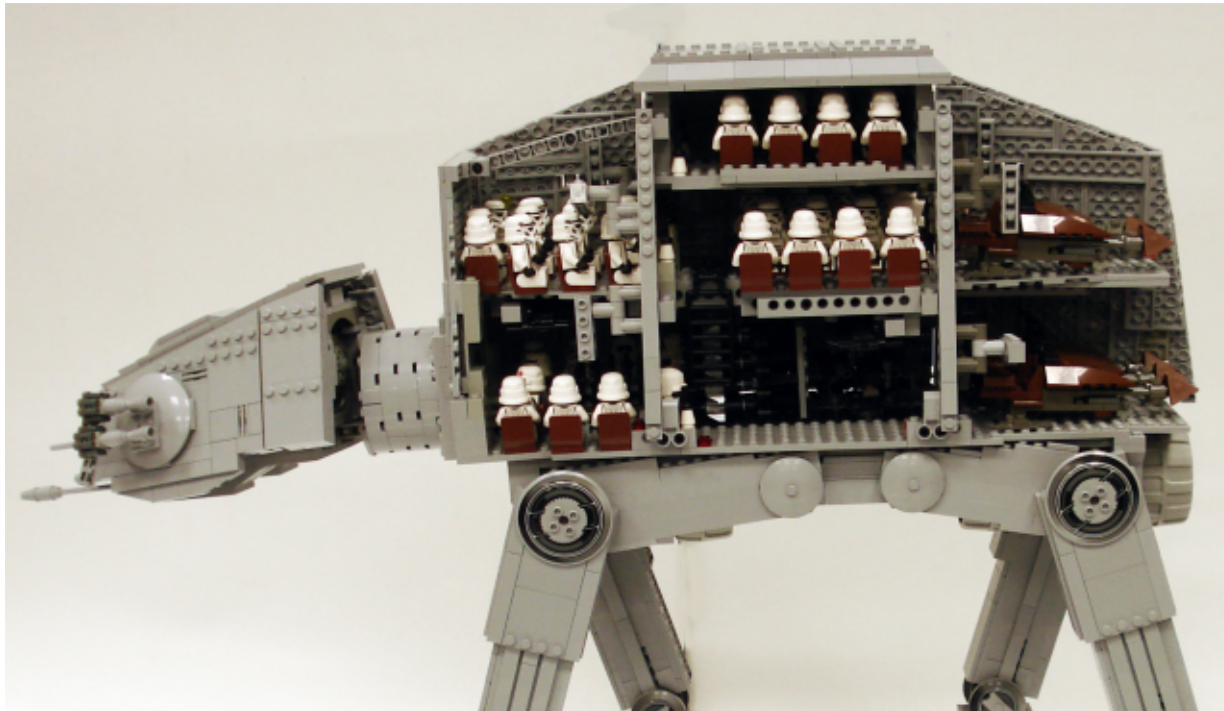
HB: How many minifigs are there in the AT-AT™?

S: The AT AT™ carries 52 minifigs:

-42 stormtroopers

-4 AT AT drivers, with different tasks.

-5 scout troopers

-1 General Veers

The AT AT also carries 5 speeder bikes, as menstioned in the AT-At specifications on many websites, weapons for each minifig, 8 bazookas, 3 cannons similar to those on set 7666 and fire extinguishers.

Well, you want the pics and that is what I bring for you. Enjoy everything.∎

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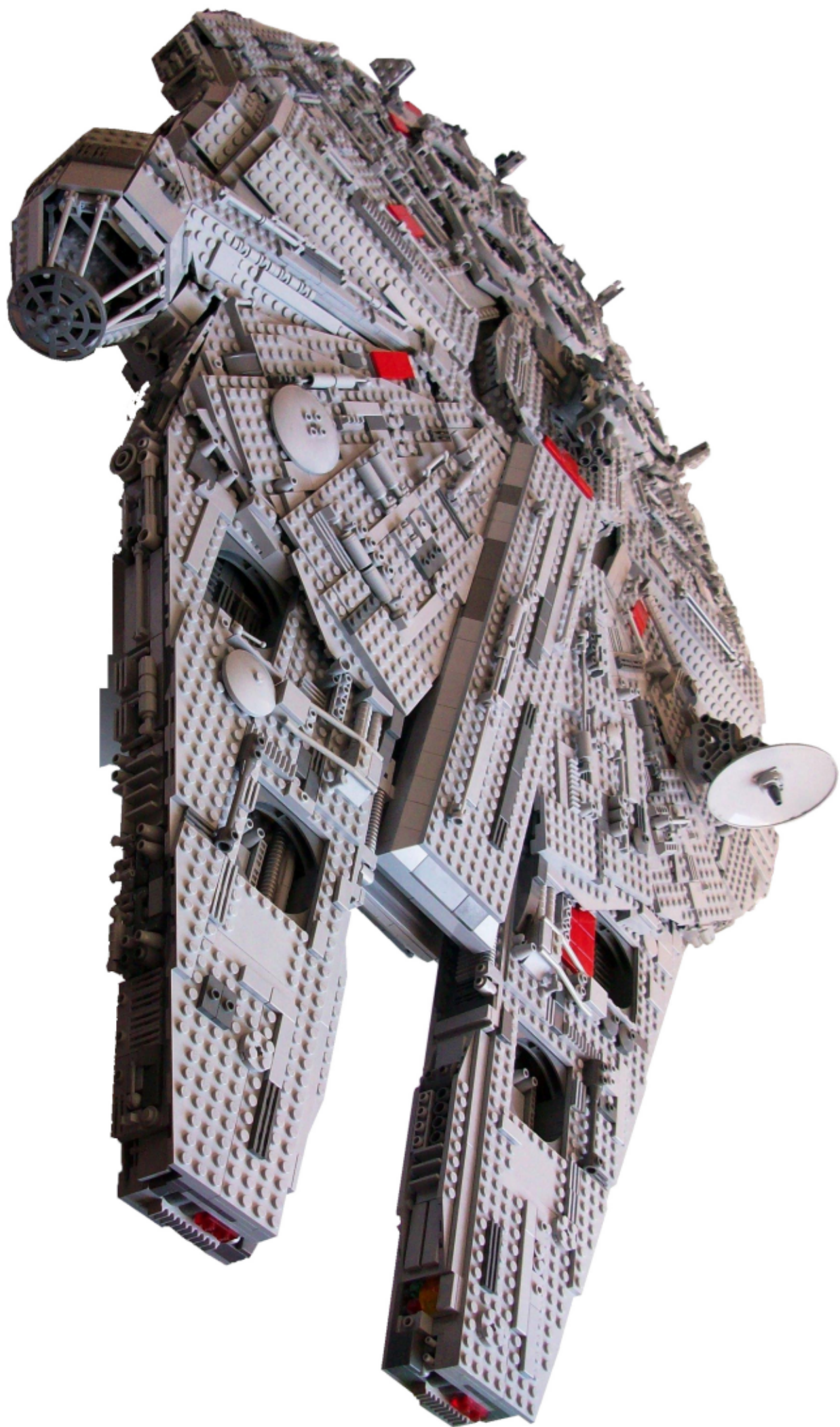
Building my own Millenium Falcon™

The fastest pile of junk in the Galaxy. Who wouldn't want one?

Text by Joaquin

Pictures by Joaquín and LEGO® Iberia S.A.

Even if you don't like the Star Wars™ universe, we have to agree that one of its biggest qualities is the incredible design for the spaceships. The Millennium Falcon™ has been reproduced so many times that we could say it has almost become an icon.

After a few well made tries, in 2007, LEGO® made the definitive version of it: A humongous 5195 pieces set, with a price tag almost as impressive. I can suppose that when it came out, many of the fans were having trouble deciding whether to treat themselves to such purchase or just pass on it.

As for me, even though I couldn't stop drooling all over the set whenever I saw it, the price was too high, and overall my enthusiasm towards LEGO comes from a different kind of sets, as well as building my own things rather than buying a set made for collectors.

But I still had an itch for it. I made a well thought list of pieces I needed and even bought some of them through BrickLink, but many of them were hard to get or too expensive and the idea of building a 10179 started fading slowly. So I just decided to make the Millennium Falcon on my own, "improvising", as I do in many of my MOCs, just using some blueprints I got from the Internet as reference for the dimensions and general proportions of the ship.

The build of the ship is relatively simple and similar to that of the 10179. A robust Technic structure with many rows of crossing Technic bricks vertically attached with Liftarms, to achieve a big but low framework for making the ship's characteristic shape. This is a really important point since the Millennium Falcon is thin and low in relation to its length, and the structure had to be sturdy enough.

Once the structure was made, I built the central

My model along with LEGO's. They look quite similar at a first glance
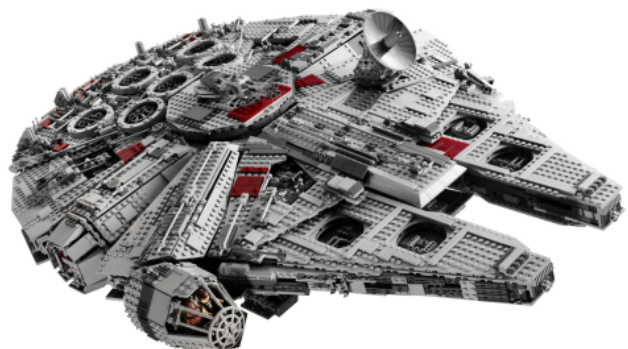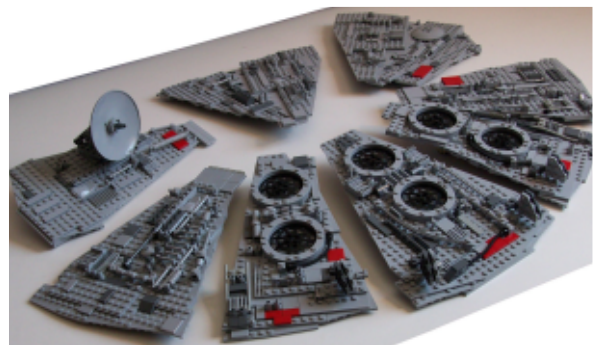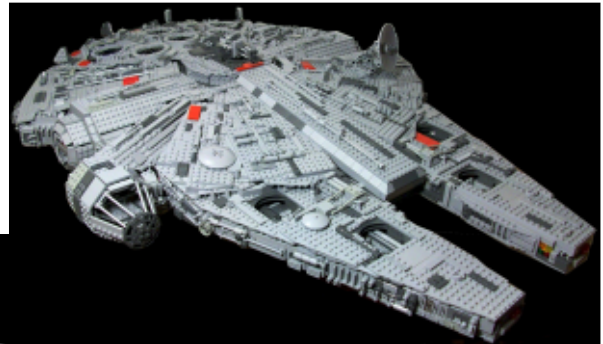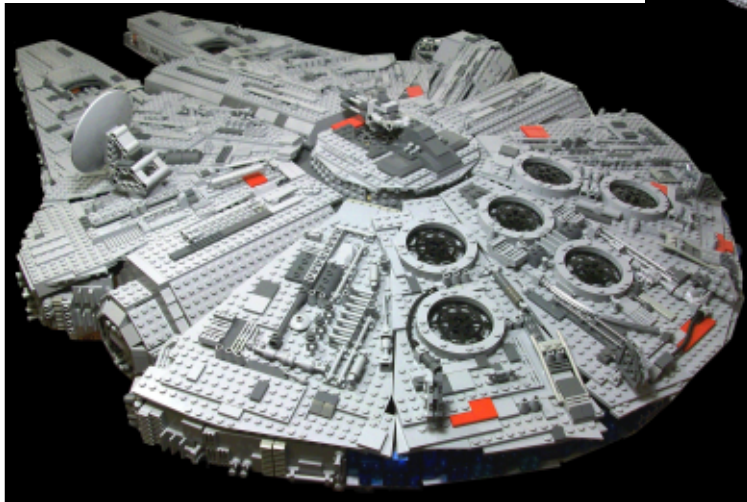
turret by making complex combinations of plates and wings to achieve the radial shape of the covers. For the famous cockpit on the right side of the ship, I just copied LEGO®'s version since it was a fragile and complicated bit to deal with. After that all the details started coming, the motors, nozzle, openings in the front... and finally the most entertaining step of all: filling all the visible studs with small pieces to achieve the so called "greebling", using my imagination so the same cup a king would be using could be some sort of cooling duct!

In the pictures of this article, you can see the final version. A ship really close to the 10179 design wise but completely different overall, a tad bigger (92x68x24 cm against the 84x56x21 cm of the official model), and lacking a complete bottom cover due to

the builder's tiredness and because it wouldn't show when taking pictures anyway.

A note worthy detail is that the ship is really photogenic from the top, but from the sides it doesn't have the same attractiveness, which is the reason why I didn't finish decorating the bottom and the legs that hold everything.

So I hope you liked it. In these links you can see the pictures of this and other MOCs I've built these past few months.

http://www.brickshelf.com/cgi-bin/gallery.cgi?f=385192
http://www.mocpages.com/moc.php/125559■

Stupid Studs by Vrykolakas and W3ird
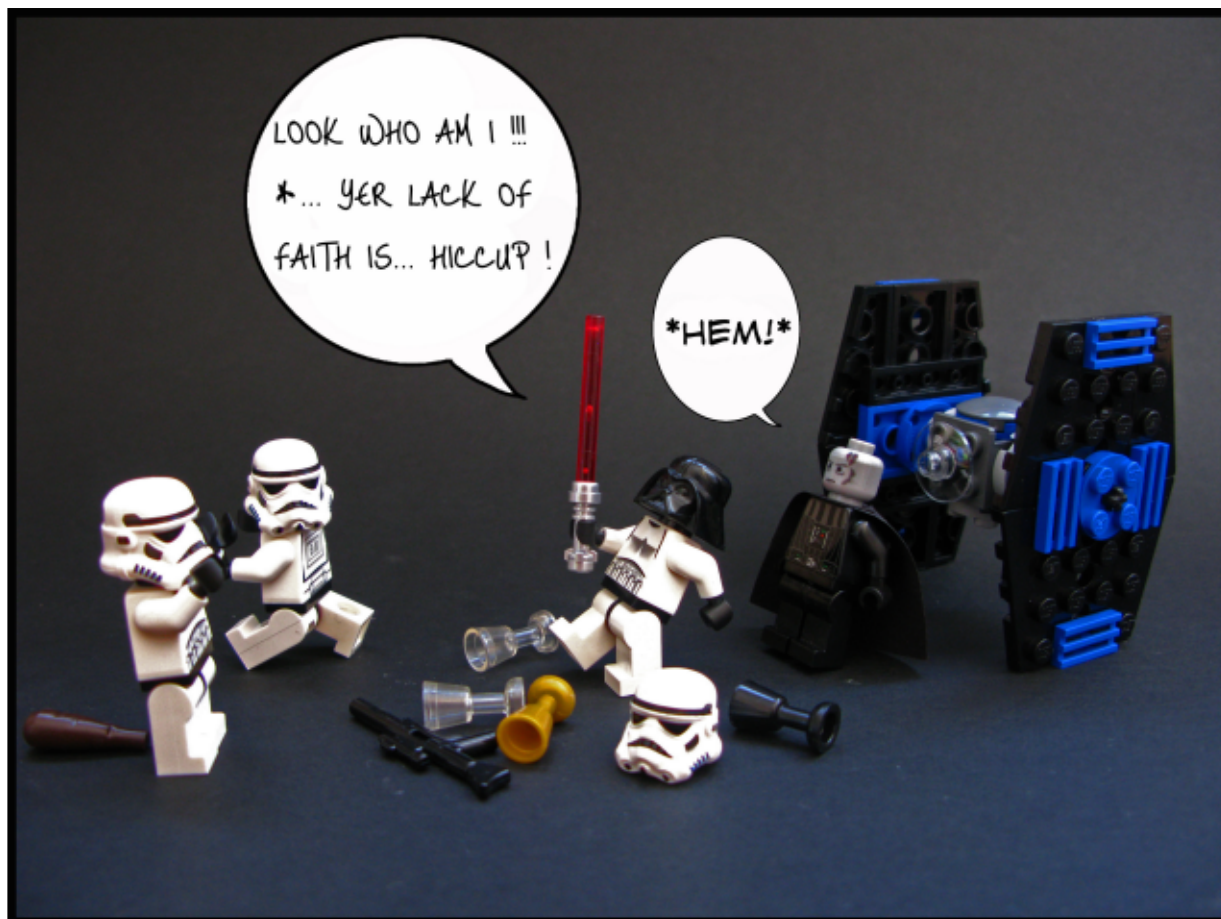
"Directive 37 from the Code of Conduct of the Death Star™: Each Storm Trooper™ must look after his equipment and not borrow someone else´s one without his express consent"

WIN A FABULOUS CHROME DARTH VADER™

For a chance to win a fantastic Chrome Darth Vader™, send us a vignette in which you would like to place this fabulous minifig.The vignette must have a 8x8 studs base, though certain elements may protrude a bit, and it should be made up of at least 30 pieces (in case of doubt, we could ask for the parts inventory of the vignette)

There is no set theme, so you can go wild on this one, but you must somehow show where you would place the Chrome Darth Vader (perhaps using a normal Darth Vader for example).

We will value the quality of the vignette along with other things like sense of humour, originality and any other thing we might come up with along the way.The vignette must be original and have never been shown before.

Send a photo to our e-mail address concurso@hispabrickmagazine.comYou can also send links to a gallery with more photos if you want. In the e-mail, you should also add: your name, your nickname/LUG (if you belong to any) and your country.

The deadline is September 30th, 2009 (0:00 h, Central European Time).

The winners will be chosen by the editors of the magazine, and will be announced on October 15th in the magazine's blog. Photos of the winners will be published in our next issue.

Five prizes will be given away, three for Spain, and two for the rest of the world.

Thanks to Jan Beyer for provide these minifigs■

Building trees (IV)

The construction process is the key to customizing our trees, because each tree is a unique construction that can take many forms.

Text and pictures by Legotron

We have seen in previous articles the systematic construction of trees. But really, when we build our own tree and customize to our liking, what process should we follow? Basically, building a tree is like building a house: it lies on rising gradually until finish. In the case of the tree construction process is simplified by the fact of not having to follow any rule when building it. The branches should not have symmetry, or a certain length, or the distribution of the leaves doesn´t have to be completely uniform.

The best way to see how easy to build a personalized tree is, is to be guided by an example, which will build a tree of medium size, such as an oak tree, full of foliage and branches. To simplify the example, the tree wouldn´t be very big, with a brown trunk and leaves that represent the usual green "plant leaves".

Necessary bricks.

The bricks needed were determined by its availability at the time of construction, which included the following pieces, according to Bricklink´s label´s [1]:

For the base:

- 2 green plates 12x6.
- 15 green plant flower stem.
- 6 plant flower stem 1 x 1 x 2 / 3 with 3 large leaves.

For the trunk, with a 20 bricks height:

- Approximately 10 brown bricks 1x1.
- About 10-15 brown bricks 2x2.
- About 10-15 brown bricks 2x2 corner.
- About 10 modified bricks 1 x 1 with headlight to simulate the hollows and holes in the bark.
- Between 2 and 4 brown arch bricks 1x5x4 for trunk´s forks.
- Between 2 and 4 curved slopes 6x1 inverted to support the main branches
- About 15 brown plates 1x2, 2x2 corner and 1x3 for secondary branches.
- Approximately 10 brown plates 1x4 and 1x6 in sum

for the branches.
- Some brown plates 2x2 to strengthen the trunk.
- About 15 brown hinge plates 1 x 2 locking with 1 finger on end and brown hinge plates 1 x 2 locking with 1 finger on side in total, for the joints of the branches.
- About 15 brown hinge plates 1 x 2 locking with 2 fingers on end for the joints of the branches.
- A dozen slopes 33 3x1, 45 2x1 and 75 2x1x3 in total, for the union of the trunk with the roots.
- 5-10 brown slopes inverted 75 2x1x3 brown.
- About 15 slopes 30 1x1x2/3 brown, to fill the joints of the branches.

To build the branches:

- Between 3 and 5 green plant leaves 5x6.
- Between 50 and 75 green plant leaves 4x3.
- Between 8 and 10 green plant sea grass green.

Construction.

As commented, for this article I had all my spare parts available to me, with the list showed above, so with this limit and a hazy idea of how I wanted the tree to be, I started the assembly. First, I started mounting the root zone on 2 plates 6x12, placing the different slopes in all directions, leaving a 4x4 studs square in the middle to build up the trunk. The process of building the trunk could be defined as a speed race, distributing randomly the different bricks,
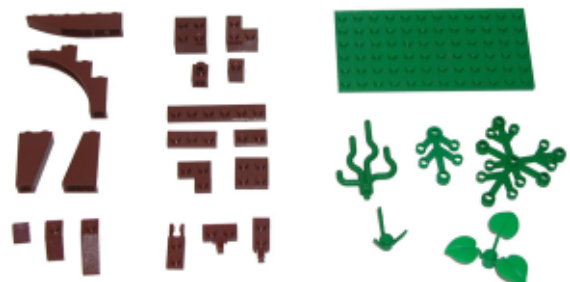
Diferent stages during construction

slopes and inverted slopes so they fill the gaps in the most irregular way up to a height of 8-9 bricks. Then we will fill the possible hollows with modified bricks 1 x 1 with headlight, to represent some holes in the trunk, and slopes 1x1x2/3 to smooth the girth. From this point up we will add the arch bricks 1x5x4 with the curved slopes 6 x 1 inverted to make two or three branch layers at different heights. It will be recommended to strengthen the trunk with this branches by means of plates, to avoid them from falling off when adding the secondary branches and leaves. The next step is to add some secondary branches, the closest ones to the trunk could be done by simply overlapping plates perpendicular to the main branches, and the more distant by using hinge plates, with a small tilting degree downwards to simulate bending under the weight of the leaves. This process, whose result can be seen in the photo of the finished trunk, can be done in just 5-10 minutes.

At first glance it may appear that the tree is not going to be very eye-catching, but we shall see that with a good leaves selection, it can look very spectacular. We began the process of laying the leaves by placing the plant leaves 4x3. First the inner leaves, the closest to the trunk, starting from below. As we climb, the leaves that do not have anything below them, we add son plant sea grass green, what will make the tree look more leafy and alive, as if they were lianas. We reserve the plant leaves 5x6 for the top of the tree in order to cover the whole trunk with

them. Finally, we place all the leaves from the branches endings, trying to cover all tree areas to our liking. This last step must be done carefully, because the accumulation of branches could make the inner leaves will fall while adding the external ones. Finally we decorate the base with a few plant flower stem and plant flower stem 1x1x2/3 with 3 large leaves to give an appearance of a very lush forest.

As shown in the photos, the result is truly satisfying, and in just 20-25 minutes. We don´t need an exhaustive planification, just let the building to take shape. The parts of the tree that do not have the desired appearance can be covered with more leaves, simply distancing from the model and seeing the tree´s whole appereance. If we are not satisfied with it, we could always start from scratch, because in each new construction we will get a completely different tree.

References:
[1] Unofficial selling LEGO® parts online: http://www.bricklink.com ∎

LDraw Tutorial (V)

LSynth 3.0 and LDview

Text an images by Jetro

LSynth 3.0

At the closing date for the last part of this tutorial LSynth 4 had just been announced, including a number of important updates. Some of these can be seen at first glance: there are more types available for synthesizing and there are new constraint parts to guide these new types. But there have also been a number of important changes inside the program that make it a lot more flexible. But first let me explain how to install this new version because at the moment it is a three step process.

Installing LSynth 3.0

Installing LSynth 3.0[1] requires a little more tan downloading and running the executable which you can get here: [2] In order to be able to use all the new LSynth functions you will also need to download a file with new constraint parts [3] which are necessary to be able to correctly synthesize some of the new types of parts. These parts are still unofficial so you may want to place them in the same folder as the rest of your unofficial parts. Maybe you want to keep them in a separate folder (Unofficial\LSynth) but remember to tell MLCad.ini where to look for them so they will turn up in the MLCad parts tree. The parts are the following:

LS01.dat - LSynth Constraint Part - Type 1 - "Hose"
LS02.dat - LSynth Constraint Part - Type 2 - "Hose"
LS03.dat - LSynth Constraint Part - Type 3 - "Hose"
LS04.dat - LSynth Constraint Part - Type 4 - "String"
LS05.dat - LSynth Constraint Part - Type 5 - "NXT Cable"
LS06.dat - LSynth Constraint Part - Type 6 - "Power Functions Cable"
LS07.dat - LSynth Constraint Part - Type 7 - "Chain Start"
LS08.dat - LSynth Constraint Part - Type 8 - "Chain End"
LS09.dat - LSynth Constraint Part - Type 9 - "RCX Cable"

Additionally the following elements will be installed, which are necessary to correctly synthesize the flexible parts:

LS10.dat - LSynth Electric Cable Segment
LS11.dat - LSynth Electric Cable Segment NXT
LS20.dat - LSynth Technic Pneumatic Hose - End Piece
LS21.dat - LSynth Technic Pneumatic Hose - Cross Section
LS30.dat - LSynth Electric Technic Fibre Optics - End Piece
LS40.dat - LSynth Technic Flexible Axle - End Piece
LS41.dat - LSynth Technic Flexible Axle - Cross Section
LS50.dat - LSynth Technic Flex-System Hose - End Piece
LS51.dat - LSynth Technic Flex-System Hose - Cross Section
LS60.dat - LSynth Short Straight String Segment
LS70.dat - LSynth Electric Power Functions Cable Segment

Finally MLCad.ini needs to be made ready in order to be able o use LSynth from within MLCad. If you haven't made any changes to MLCad.ini you can simply download the latest version [4] and overwrite your current MLCad.ini. If you have made any changes, take careful note of them (you may have indicated the location of unofficial parts as explained in a previous part of this tutorial) and apply them again in the newer version. In addition to information necessary to LSynth and about the location of your parts library, MLCad.ini contains a lot of information for the minifig generator which is updated (increased) periodically.

The latest version of MLCad.ini comes prepared to define the location of unofficial parts and LSynth parts. Towards the end of the file you will find the following lines:

```
1 = SHOW <LDRAWDIR>Parts
2 = HIDE <LDRAWDIR>P
; 3 = SHOW <LDRAWDIR>Unofficial\Parts
; 4 = HIDE <LDRAWDIR>Unofficial\P
; 5 = SHOW <LDRAWDIR>Unofficial\LSynth
```

Provided you have followed the suggestions abut the location of unofficial files, you simply need to delete the semicolon before numbers 3, 4 and 5 and you are ready to go.

Finally you'll have to define the location of LSynth in the following line:

```
[LSYNTH]
%PATH = "Define absolute path to LSynth"
```
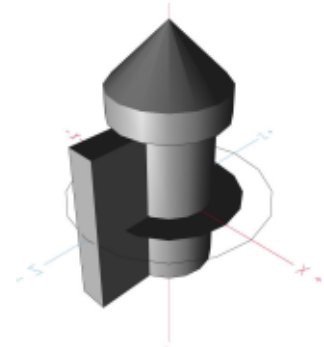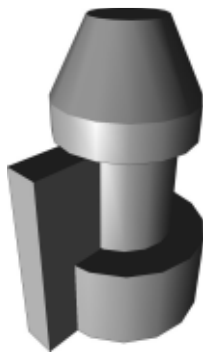
For example in the following way:

%PATH = "C:\Programs\LSynth"

You are ready to get started!

First steps

As you will have seen from the list of constraint parts, you can synthesize many more flexible parts with this new version of LSynth. There are now a total of 18 possibilities predefined:

Hose or cable type:

01 - ELECTRIC_NXT_CABLE
02 - ELECTRIC_POWER_FUNCTIONS_CABLE
03 - ELECTRIC_RCX_CABLE
04 - FIBER_OPTICS_CABLE
05 - HOSE_FLEXIBLE
06 - MINIFIG_CHAIN
07 - STRING_HOSE
08 - TECHNIC_AXLE_FLEXIBLE
09 - TECHNIC_FLEX-SYSTEM_CABLE

10 - TECHNIC_FLEX-SYSTEM_HOSE
11 - TECHNIC_PNEUMATIC_HOSE
12 - TECHNIC_RIBBED_HOSE

Closed belt/tread/chain type:

13 - RUBBER_BAND
14 - RUBBER_BELT
15 - TECHNIC_CHAIN_LINK
16 - TECHNIC_CHAIN_TREAD
17 - TECHNIC_CHAIN_TREAD_38
18 - TECHNIC_TREAD

As can be seen the possibilities are much broader now and the new treads (TECHNIC_CHAIN_TREAD_38) strings (STRING_HOSE) and minifigs chains (MINIFIG_CHAIN) have already been included. However, although there is a fiber optics cable in the list, this type can only be used to synthesize the Fibre Optics x165 which came (for example) with the Space Shuttle 8480, but not the x400 which came with the RCX, Spybots and some Exoforce sets. But since the new configuration of LSynth no longer has part definitions hard coded in the executable but

depends on the external file lsynth.mpd it is possible to add new types of parts and modify existing ones using the available parts. The definition of the fiber optics cable that is included in lsynth.mpd is the following:

```
FILE FIBER_OPTICS_CABLE.ldr
0 FIBER_OPTICS_CABLE SYNTHESIS DEFINITION
0 Name: FIBER_OPTICS_CABLE.ldr
0 Author: Kevin L. Clague
0 Unofficial Model
0 SYNTH BEGIN DEFINE FIBER_OPTICS_CABLE
HOSE STRETCH 2 50 0
0 ROTATION CENTER 0 0 0 1 "Custom"
0 ROTATION CONFIG 0 0
1 0 0 0 0 2 0 0 0 1 0 0 0 2 4-4cyli.dat
1 0 0 0 0 2 0 0 0 1 0 0 0 2 4-4cyli.dat
0 // LSynth Electric Technic Fiber Optics - End Piece
1 28 0 0 0 1 0 0 0 1 0 0 0 1 S\LS30.dat
0 SYNTH END
```

The Fiber Optics Cable x400 is wider and both ends of this cable are the same. If you have a look at the following definition which Philo suggested for the x400 cable you will see that tweaking the parameters and eliminating the last two lines about end pieces you can quite easily create a 'new' kind of flexible part in LSynth:

```
0 FILE FIBER_OPTIC_CABLE.ldr
0 FIBER_OPTIC_CABLE SYNTHESIS DEFINITION
0 Name: FIBER_OPTIC_CABLE.ldr
0 Author: Kevin L. Clague
0 Unofficial Model
0 SYNTH BEGIN DEFINE FIBER_OPTIC_CABLE
HOSE STRETCH 8 50 0
0 ROTATION CENTER 0 0 0 1 "Custom"
0 ROTATION CONFIG 0 0
1 0 0 0 0 4 0 0 0 1 0 0 0 4 4-4cyli.dat
1 0 0 0 0 4 0 0 0 1 0 0 0 4 4-4cyli.dat
1 0 0 0 0 4 0 0 0 1 0 0 0 4 4-4cyli.dat
0 SYNTH END
```

In view of this flexibility by editing the lsynth.mpd file it is a good idea to check the availability of an update to this file periodically in order to make the most of the improvements and/or additions that may be included in this file. The use of LSynth hasn't changed beyond the availability of new flexible parts and constraint parts so for information on how to use the program please consult the part 4 of this tutorial.

LDView

Until now we have talked almost exclusively about the tools that are available through the MLCad interface. However, the world of LDraw is much larger than that. In addition to a library of virtual parts, the tools that make up the LDraw environment can be roughly divided in three categories:

- Construction tools
- Rendering tools
- Publishing tools

So doesn't MLCad provide options for all of these? Well, in a very limited way it does: it allows you to build a model, but also lets you see it in 3D and see construction steps. However, the possibilities of MLCad in these last two areas are rather limited, and there are other tools – equally easy to use – that give you much better results.

As its name indicates, LDView is a tool for viewing (or rendering) LDraw files. It allows you to see 3D constructions with good quality without needing a lot of resources (processor, memory) and lets you adjust viewing parameters to your needs and likes. And it's available for Windows, Mac and Linux!

Installing LDView

Installing LDView is quite straight forward but its worth having a closer look at some options that will allow you to create renderings of a higher quality. The program can be downloaded from the website that has been dedicated to this tool [6]. Select the version that corresponds to your operative system and after downloading, install it. The first time you start the program it will ask you if you have the LDraw Parts Library installed and if so, where. If you tell the installer LDraw is not installed, it will download the parts library in order to be able to work with it.

Since you may need unofficial parts to see certain renders there are two options. You can let LDView download the unofficial parts it needs for each render. You can also indicate in what additional folder(s) LDView needs to look for the unofficial parts. To do this go to File > Extra Dirs... and click on the icon that says "C:\" towards the bottom of the window that opens. You can then select the folders that contain unofficial files (for example C:\LDRAW\Unofficial). You can of course use both options at the same time.

Configuring LDView

You can get to the LDView configuration window by clicking on Edit > Preferences (or Ctrl+May+P). The following elements deserve special attention as they improve the quality of the final image considerably. However, as always, you will need to find the right balance between quality and speed (the higher the quality the more complex the rendering and the more time the computer needs) although modern computers don't have much of a problem in this area.

On the first tab **(General)** you will want to select the highest available value for FSAA (Full Scale Anti Aliasing) and mark the checkbox for "Antialiased lines".

In the "Colors" area you can choose the background colour for your renderings. The values for Default and Transparent only apply when rendering original LDraw parts files.

The "Misc" area contains two options that are of special interest: "Process ldconfig.ldr" and "Show errors after loading". The first option deserves more

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explanation than this in a future part of this tutorial and "Show errors after loading" is very useful to determine why an LDraw file isn't rendered as expected, and provides information about files and parts that are missing.

The "Default Save Directories" area allows you to select where screenshots, parts lists or the whole model will be saved and you can choose between the folder the original model is in (Model), the last folder that was used (Last saved...), or a location to be specified at the time of saving the file (Specified). The options on the **Geometry** that you might want to use are easily accessible in the icon bar of the main interface and it is more practical to test the configuration that best suits your needs there. The same is true for the **Effects** tab, although this is the place where you can easily the direction of the lighting.

On the **Primitives** tab you may want to select "Primitive substitution". This allows LDView to use its own primitives [7] which can result in more natural and less angular rendering. Also, this is the only way you can also select "Texture studs" which will print the LEGO logo on all studs. Again, the more advanced the options you select, (the further down the more advanced) the better the quality of the final render, but with the corresponding 'cost'. The option "Curve quality" allows you to adjust the number of sides that will be used to draw a curve. If you take a look at a stud in MLCad you will see that all studs are 8 sided. Using the curve quality these parts can be made rounder, but use the option with care because it may occasionally produce undesired results. The options "Primitive substitution" and "Texture studs" are also available in the main interface.

The **Updates** tab has an option to "Automatically check LDraw.org for missing parts". In case a part that is required to correctly render an LDraw file is not installed, LDView will try to download it from the Parts Tracker at LDraw.org automatically. If for any reason LDView is not able to connect to the internet, this option will be automatically disabled and you will need to enable it manually to use it again.

Finally, the **Preference Sets** tab gives you Access to a number of predefined configuration sets   that can serve as a basis for your own optimum configuration. You can also save your own configuration sets and even assign a keyboard shortcut (hot key) to load those preferences in a fast and easy way.

Using LDView

The use of LDView is very intuitive. You simply need to load an LDraw file in order for it to be rendered and dragging with the mouse you can view it from any angle. Sometimes it can be a little hard to get the exact angle you want in all three directions. This is due to the fact that the model rotates around a fixed point that cannot be changed. There are several aids to make it easier to find the exact angle you want. One of them is the set of keyboard shortcuts Ctrl + 0-6 with which you can obtain the following angles: "two-thirds" (the default with which LDraw opens all models) front, back, left, right, top and bottom. Ctrl+9 allows you to select a specific angle for the model as well as the distance at which you want to place it.

To see the render closer up (or further away) you can use the mouse Wheel or hold the right mouse button and drag. In addition, holding Ctrl+Alt and dragging allows you to move the whole model which is very useful if you want to zoom in on a specific detail of the render.

Some times you notice you made a mistake in your LDraw file when you have a close look at a rendering in LDView, or you may want to hide part of a construction to be able to see what's behind it. If you open MLCad or another editor and make the necessary changes you can simply click on the third icon from the left in the LDView icon bar to reload the file and see the changes you saved.

The next group of icons provides access to some of the options we've seen in the preferences window. I encourage you to test each one of them to see how they affect your renders so you can choose the configuration that best suits you.

Finally there is a group of options on the icon bar (after 'Step:') that are new in LDView 4. They allow you to see the steps that have been included in the LDraw file. This can be very useful both to build rebuild a model of which we have obtained building instructions and for creating high quality images for

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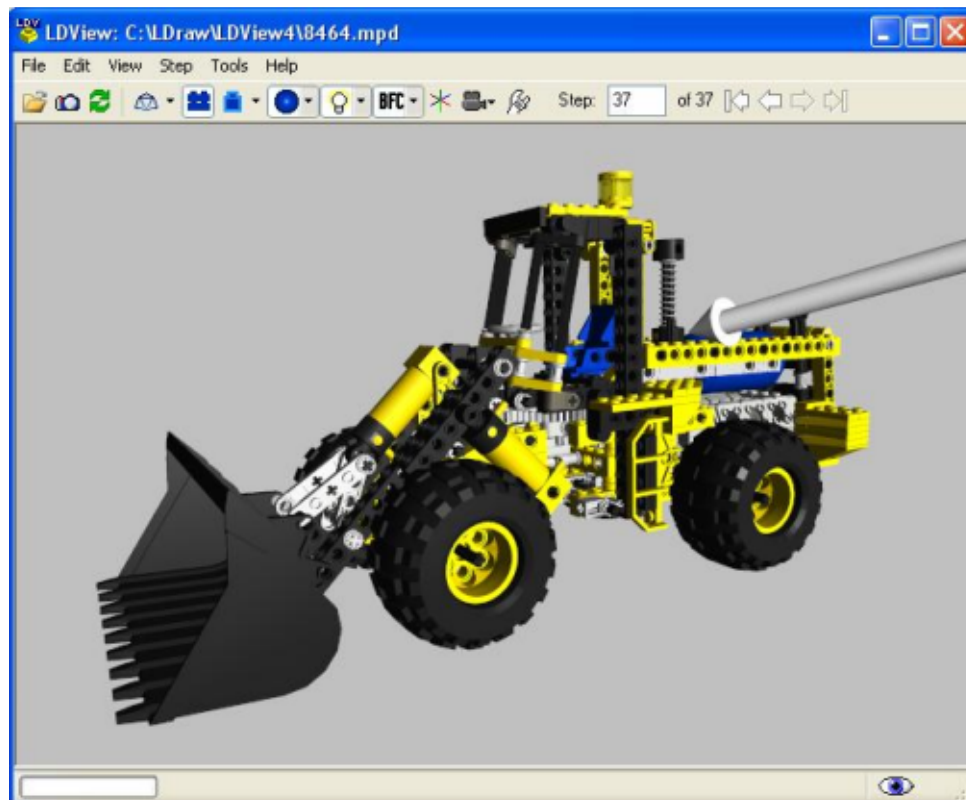
step by step instructions of your own constructions. Another novelty in this version of LDView is that inn addition to the steps you can see the individual files that make up an MPD. In order to access this function you need to go to "Tools > MPD model selection" (Ctrl+M) and in the window that opens select what part of the MPD you want to see. LDView also allows you to change the lighting angle of a model in a very easy way. Simply hold the Shift button and move the mouse. If you have trouble finding the right angle you can get back to one of the 'standard' angles in the Effects tab from Edit > Preferences.

More information

But that's not all. LDView can give you much more information. It can generate a list of parts used in a model in HTML format. This list can include information such as the reference number o each part, its colour, quantity and description and allow you to Access an image of the part on Peeron.com. Another type of information LDView can give is related to the camera angle for use in Pov-Ray, a much more powerful, but also much more complex rendering tool.

Screensavers

The LDView installation procedure presents you with an option to install a screensaver. If you would like to use this option but forgot to mark it during installation, never mind. You can safely reinstall LDView without uninstalling it first and all your preferences will be saved. You ca configure the screensaver just like any other screensaver – right-click on the desktop, select "Properties" and go to the Screen Saver tab.

After going through all this information I can only make one recommendation: test, test and test again. LDView is easy to use and I'm certain that after a few attempts you will be able to get exactly the result you wanted. If you have any further questions or suggestions please let me know either on the HispaLUG forum [8] or at info@hispabrickmagazine.com.

[1] Another complete tutorial is available at www.holly-wood.it/lsynth/tutorial-en.html and includes all the links to the necessary downloads.
[2] www.kclague.net/LSynth/index.htm
[3] www.holly-wood.it/files/lsynth/Constraints.zip
[4] www.holly-wood.it/mlcad/ini-en.html
[5] www.holly-wood.it/lsynth/tutorial-en.html
[6] ldview.sourceforge.net
[7] 'Primitives' are subparts that are recycled and reused in many parts. For example, each stud is in fact an independent subpart that a brick part will use as many times as it needs to draw individual studs.
[8] www.hispalug.com

Bibliography:

www.lugnet.org\cad
http://www.holly-wood.it/lsynth/tutorial-en.html
http://www.viddler.com/explore/anoved/videos/22/■

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An introduction to Robotics with LEGO® MINDSTORMS™ (II)

So I´ve got an NXT, but now...

Text and images by Koldo

So I've got an NXT, but now that I've opened the box, where do I start? That is quite a common sensation for those who have no prior experience with robotics: will I be able to make the most of all of this?

The easiest starting point is building and programming the models that come with the set, following all the building and programming steps, and playing with them. When I say playing I mean modify the original programs and observing how the robot reacts to those changes in its behaviour. That is a great way to learn. You can also change the hardware, that is to say, any element of the structure of the robot or of its motor and sensor systems.

If things don't works as expected... don't worry. It's normal. Often things work quite well on the computer, but in real life things don't always work as expected..

And then what?

It isn't always easy to decide on one idea or another and often we can't think up anything. That happens to all of us. We'd love to come up with a brilliant idea no one has had before, something we'd feel really satisfied about. But that doesn't happen every day, so in the meanwhile you may want to do something more conventional or get some ideas from books or the Internet.

One type of robot that provides a lot of opportunities for learning programming is a mobile robot with wheels (or tracks - these are not included with the NXT, but can be found in some other sets and with the RCX). This kind of robot is easy to build and can be used together with several different sensors. One of the simplest could be the one in figure 1[1] instructions for which you can find at Lrobotikas.net.

Before you start building you'll have to take some decisions, the most important of which is deciding what kind of steering mechanism you'll give it. With mobile robots on wheels different systems can be used, like differential steering, the kind of steering used in a tricycle or the steering of a car. Without a doubt you best option is differential steering because of it's simplicity: to motors control two wheels, one on each side; if both turn in the same direction and with the same speed the robot will go forwards or backwards, if the speeds are different the robot will turn (this system is used in the Tribot, one of the original LEGO® models).

It's always a good idea to have some basic ideas to develop with the NXT and the basic set and in the following lines some ideas will be proposed. These ideas don't require any complex mechanical design as there is no point in starting out with a very complex construction - you can always do that later on. In the article about LEGO MINDSTORMS™ in the previous edition of HISPABRICK Magazine I pointed out that before writing any code in NXT-G (or any other programming language), it's a good idea to write down what the robot is supposed to do in normal language, using the same words we use normally. To this end we only need to put ourselves in the place of the robot and make an ordered list of the steps we would take to solve the problem. A basic algorithm accompanies each one of the ideas, although you need to develop them in more detail to put them in practise.

- A robot that starts and stops when you clap your hands: This is a very simple robot. It needs to wait until the sensor **detects sound above the level you determine** and then **start moving** (motors on without limit) and wait to **detect the sound again**. It should **repeat** all of this endlessly. Attention: don't place the sound sensor too near the motors as the noise they produce might interfere with its proper functioning.

- A robot that drives around a space, avoiding obstacles without touching them: this moving robots needs to use the ultrasound sensor to detect any obstacles that may get in its way. It **goes forward** until the sensor **detects** an obstacle at a distance that is inferior to what has been set as a safe distance. It then **stops and turns** until it **finds** a direction in which it can advance without running into an obstacle **and starts over again**.
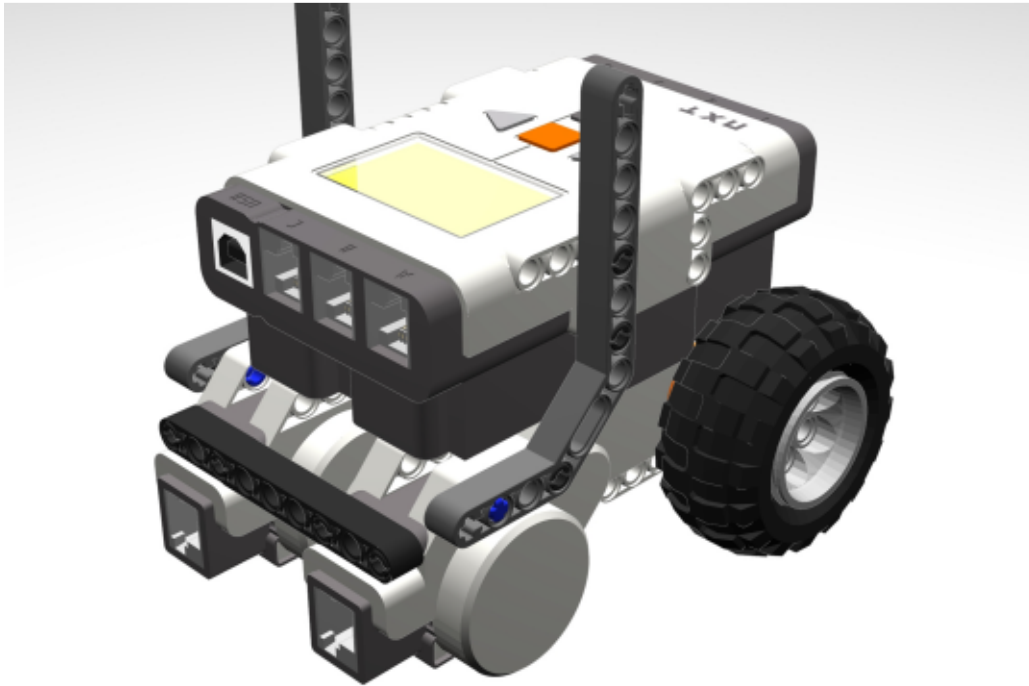
- A robot that moves around avoiding obstacles using a touch sensor: basically it is no different from the previous idea, although in this case first it has to **move forwards** and wait until it **hits something** (sensor is activated) after which it **stops**, **avoids the obstacle** (by moving backwards and turning) and then **starts over again**.

- A robot that tells you the distance travelled when you push it forwards manually: this involves some basic maths since we need the formula to convert the rotation of the wheel into distance. The robot will **read** how much the motor has turned, use the programming locks that allow you to **do maths** and show the result on the screen of your NXT in the unit of your choice.

- A robot that looks for light: when you are faced with a challenge, the best thing to do is how you would solve the problem, and in most cases there is more than one way of solving the problem. What do you do when you want to go towards a brighter area? Well, the first thing would be to have a look around, take note of the level of light you can see and then move towards the lightest area. The robot will have to do the same thing: **make a full turn** on the spot, checking light levels, **memorize** the direction in which it saw the most light and what value it noted there and then turn back and **look for** that spot in its second turn. But you are sure to come up with another way of doing it.

- A shy robot that runs away from the light: this one is similar to the previous one, but in this case it needs to find a dark pace to hide.

- A robot that follows a line: for thi robot you can use the pad that comes with the MINDSTORMS set. You can use a number of different strategies and since the LEGO® MINDSTORMS™ set comes with only one light sensor you will have to think of a way of doing it with only one sensor. One way is trying to make the robot move along the outside edge of the black line , following it in the clockwise direction (which means the robot will have a white space to its left and will follow the black line keeping it to its right). When the robot detects that the sensor is over the white space (which means it moving to the outside) it will have to correct its course towards the right and when the reading shows its over the black line (the robot is moving towards the inside) it will have to correct towards the left.

In each of the above mentioned cases you can design a robot that is 100% predictable in its behaviour or give it some margin to take its own decisions. How can you do that? That is easy: in each case where it doesn't have any specific instructions you can let it throw the dice to decide whether to turn left or right when avoiding an obstacle or whether to go backwards during one second or three...

Books and the Internet

These are two sources of very interesting ideas. I
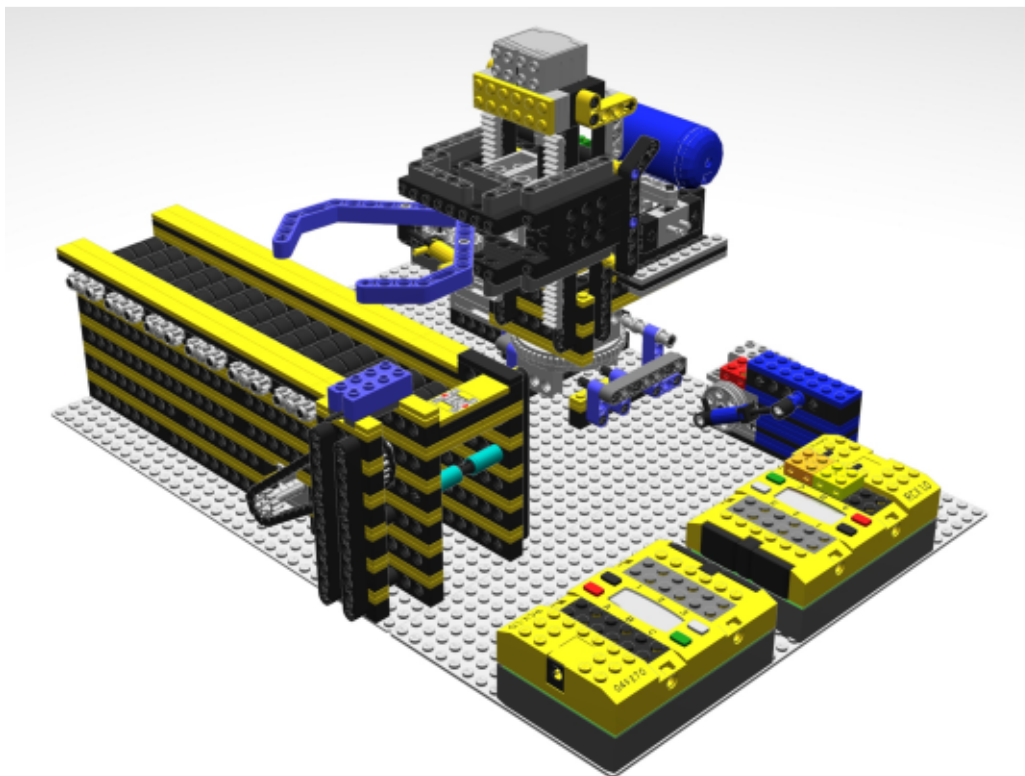
will dedicate another article to giving more information, but I want to mention one at this time which can be very interesting because of its structure and content, "LEGO® MINDSTORMS™ Zoo!". This book takes the zoo as its central point and develops free reproductions of several animals. Although the book is written in English, this is no obstacle for anyone not fluent in that language as it contains lots of graphical information including step by step building and programming instructions.

On the Internet you can also find many ideas and websites with models that include step by step instructions. A very interesting website in this regard is NXT programs[2], which offers more than 60 models you can build with only the elements contained in a single NXT set without any additional parts, together with step by step building instructions and the corresponding programs in NXT-G.

Exploring new ideas

Where can you find new ideas? The first place to look for them is in your immediate surroundings, our routines, in a problem that arises, in a visit to a museum or a fair..

One example of this is a project my son did a couple of years ago with the RCX. It started when we had a problem with our electrical installation and the main fuse blew while we were on holiday. When we arrived home the freezer had defrosted and all the food had gone bad. While we were cleaning up the

mess his mother said "why don't you invent something to prevent this from happening again!". A week later he presented a construction that sent a message to my cellphone when the mains supply was disconnected[3].

The idea in the figure was inspired by a visit to an industrial tools fair[4].

Final remarks

Two weeks after the publication of this magazine a thread will be opened at the forum Lrobotikas[5] to discuss the first proposal and after that each 2 weeks another thread for the remaining proposals in order to collectively solve any doubts, problems, etc. that may arise.

[1] Download area at http://lrobotikas.net
[2] http://nxtprograms.com
[3] See http://lrobotikas.net/es/modelos/rcx/51-alarmasistema
[4] See http://lrobotikas.net/es/modelos/rcx/61-manipulador
[5] Forum Lrobotikas at http://foro.lrobotikas.net ∎

BlueBrick

An essential tool for your display

Text and pictures by Jetro

The world of virtual bricks isn't limited to designs and rendering in a CAD like environment. Tools like those included in the LDraw system of tools or the design software launched by LEGO® itself under the name LDD are very useful when you want to document or design a MOC, but there are certain tasks related to the design process for which they are not very well suited. When you want plan a layout, especially if it includes a railway track (whether for a train or monorail) these tools are not easy to use, nor do they provide the specific information you will be interested in for these cases, like how much space will it will take up and which parts will are needed. Anyone who has participated in some LUG or TC [1] event knows that it's also very interesting to be able to make some sort of map in order to make collaboration easier and have a work document that can esaily be modified.

In order to cater for this need there already existed a tool which, despite it's relative age, is still used by many. This tool is Track Designer (TD[2]). It was created by Mathew Bates, was originally designed for Windows 95 (!) and allows you to easily create track circuits. However, the software hasn't been updated in many years. In 2003, Cary Clark presented TrackDraw, and for some time it looked like this nw application would replace TD. However, the project never got out of the Beta version.

Towards the end of 2007 Alban Nanty started working on what would turn out to be BlueBrick. As Alban himself put ithe "Even if Track Designer is a great software, I was annoyed by its limitations, i.e. the lack of undo, the limited level of zoom in, and the lack of possibilities to add annotation texts or area delimitations, which are very convenient and often used by the AFOL to prepare their layout with different people. Usually the AFOL was exporting the Track Designer layout in picture and add all these information in Photoshop, which makes the process a bit painfull when there are a lot of changes during the show preparation."

What can BlueBrick do?

Working with BlueBrick is easy. The application doesn't require any installation, although it requires .Net Framework 2.0 to work. From version 1.2

BlueBrick is trnslated into French, German, Dutch, Portuguese and Spanish. Among the characteristics that stand out is the fact that Bluebrick by default opens with a grid based on the size of 32x32 baseplate and a larger division of 3x3 baseplates, although this division can be freely configured from the general options menu.

Placing tracks in BlueBrick is also a simple task. From the toolbar you can select the grid snapping step as well as the rotation step angle and the parts you need can then simply be dragged from the library onto the workspace. If the parts have the right angle they will automatically connect because the program uses a system which identifies the connection points of track parts. But laying out a track can be even easier. After inserting the first track part, BlueBrick will automatically add the next part you click on and connect it to the left of the part that was selected. In the case of bends you simply need to indicate the direction of the first part and rest will automatically be added in the same direction. But there's an even simpler way of laying don tracks. By default a numnber of keyboard shortcuts have been configured with which you can insert a part by pressing the associated key, in much the same way as when you click on the piece in the library.

In order to make it easy to include different types of elements, BlueBrick uses a ystem of layers. Each layer can contain a specific type of data and in this way it is easy to separate a track design from the baseplates it will be placed upon. You can also create a text layer for annotations or an area layer to indicate which AFOL is in charge of a particular part of the layout.

If you still have tracks designed with TD, no problem! as long as the file is version 2.0, Bluebrick can open the file and convert it to the BlueBrick format. If it containes any element that is not available in, a red X will appear in its place to help you substitute it with another part from the library BlueBrick provides.

These parts have an open file format: the parts are gif files. In order to give the part the right size you should take into account that a 256x256 pixel files translates into a 32x32 stud part. In the case of those parts that need to have connection pints
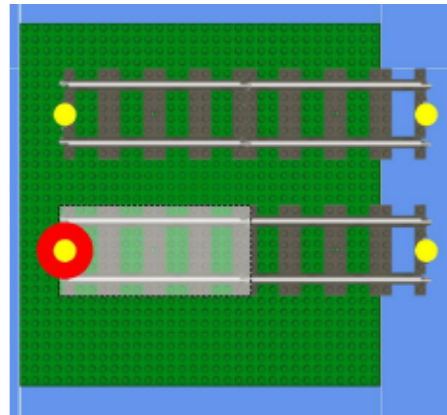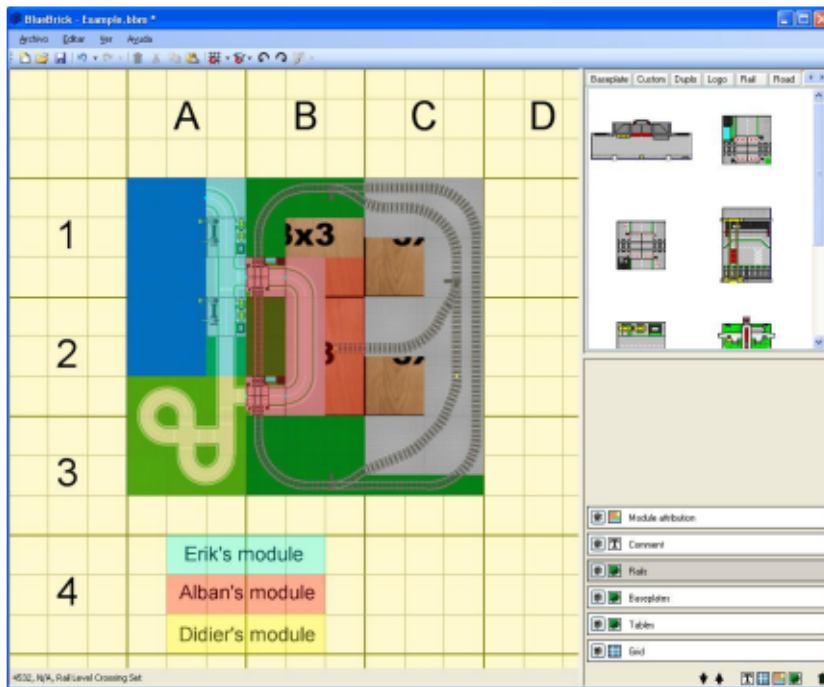
defined (train and monorail tracks) there is also an xml file to indicate the type of part and location of the connection points. The xml fikles that accompany the BleuBrick parts are well documented and it is relatively easy to create a new part in this way.

Finally, once the track and all the accompanying elements have been designed you will wat to know the total size of the layout. BlueBrick can show you a list of parts as well as detailed information about the size of the layout in studs, meters and feet.

More?

BlueBrick has a lot of other functions and is still being developed further. There are still a number of thin that need to be included in the program, among which are the new flexible tracks.

Although BlueBrick was designed for .Net Framework 2.0, it also works under Mono. This has however not been fully tested. Feedback from users who work with MacOs or Linux and want to test drive BlueBrick is most welcome.

For the time being there are no help files for BlueBrick, although the website for the program offers some explanations about how to use it. Alban Nanty appreciates any collaboration towards the writing of tutorial and the translation into more languages.

[1] LUG = LEGO® User Group, TC = Train CLub. To find a LUG or TC near you, check out http://www.lugnet.com/map/ o http://www.googlego.info/beta1
[2] http://www.ngltc.org/train_depot/td.htm

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Lugnet/CAD
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Interview: Jan Beyer

LEGO® Community Development Manager

By Hispabrick Magazine

Pictures by Roman Gibert and lluisgib

Hispabrick Magazine: You started at LEGO® Juris. Which was your task on that department?

Jan Beyer: Yes, that is correct – I started back in 2003 as Global Lease Administrator at the LEGO Legal Department. My task was to take care of all the leases (offices, warehouses, shops…) the LEGO Company had around the world.

HM: After that, you went to the LEGO Community Development....

JB: One year later I moved partly to LEGO Brand Retail to take care of the leases they had around the globe and the other half of my time I started to work with the German LEGO Fan Club 1000steine to build a good relationship. After that I took over the contact to the Dutch Community and further on so I used less and less time on Brand Retail. Since 2005 I only work for LEGO Community Development.

HM: Did you know where you were going (regarding type of tasks, a job different than the previous one)?

JB: I had a kind of idea what was going on but was not completely sure because it was quite new for Europe and – as you write – completely different from my old job.

HM: How was introduced the fan community in the company?

JB: I was introduced the first time to the 1000steine Community on the 1000steine Land in Berlin in 2004. And then it started to get faster and faster with new contacts.

HM: What did you find there? And what did you learn?

JB: I found a lot of very nice and open people who played with LEGO bricks and built some fantastic creations and they welcomed me very warm so that

was super. I learned a lot about the German community and that you sometimes need to be very diplomatic and how to work with the very special people who form the AFOL community.

HM: You have attended to hundreds of fan events. Are there many differences between European Countries?

JB: I would not say I attended hundreds but I visit around 20 events a year so I might be close to hundred – I actually never counted ☺. I feel there are some differences between the different Events in Europe but the countries and the people are different so that is quite natural. I like to explore the different ways and styles – but at the end all is about the LEGO brick.

HM: And between Europe and America?

JB: Yes – some differences here too – in Europe we do more exhibitions with public visitors and evening fun for AFOLs and in the US it is more convention style with a lot of speeches and not always a lot of public. But there are also similar events on both sides.

HM: Community Development usually gives support to the events. Which is the main goal of this support?

JB: Yes, that is right – we try to support the events as good as we can – that can be everything from some ideas to products/bricks and even big involvement from our local sales companies. The goal is always to make the event as LEGO like and exciting as possible for the visitors but also for the participating AFOLs and to feature our products and brand to our core target groups.

HM: Do you get any kind of feedback from the events?

JB: Usually I get direct feedback from the

organizers, participants and public when I am visiting the event in person but otherwise if I cannot make it to the event (last year I supported over 45 events) I normally get feedback from the organizer like a report or at least some conclusions and pictures in a email.

HM: How do you proceed when you find a new talent in an event?

JB: Usually I speak to the person who is a really good/special builder and ask him/her to prepare a portfolio with his/her work and get it to me. Beside this I take some pictures of his/her creations. I then show the pictures to my design colleagues for the respective area. But I can never promise that somebody get a designer – that is the decision of the Design Department.

HM: Which is the motivation when TLG invites LEGO® fans to a workshop?

JB: We are interested in new ways of building and ideas and also to give our designers some very talented people to work together with to co create. Also the fan community is very important to us so we want to hear their direct voice and let them co create with our designers.

HM: Are these workshops positive for the company?

JB: Yes – they are very positive – the designers and the company always get a lot out of workshops and I think the participating fans and the whole community

too. So the money the workshops cost us is very good invested.

HM: We know the Factory sets designed by fans, but are fans involved in other projects not so viewable?

JB: We have/had fans involved in many projects like the Café Corner Design, the new Mindstorms NXT, the Power Functions system, the new PF train and several other projects I cannot speak about.

HM: Which are the typical requests you receive from fans?

JB: We would like all bricks in all colors available, make more natural/dark colors, bring back the monorail, more sets designed for Adult fans, lower prices and so on ☺

HM: Which is the rarest? And the funniest?

JB: Could you design better sets – I think most of the Fans are now very happy with the new sets and tell me the design is getting better and better so they almost need to buy all sets ;-). Lately funniest was: Could you please help me to get pictures/drawings of the Airbus A 380 in LEGOLAND Germany – I want to build it – and he did!

HM: Are always the same complaints between AFOLs from different countries?

JB: Beside that the AFOLs from countries who are

less LEGO® penetrated and perhaps have no access to LEGO S@H are complaining about how to buy LEGO sets/certain sets – most of the complaints are the same.

HM: Your task in the Community Development is not only attend events. Which are your other objectives?

JB: My main task is to organize/improve/orchestrate the communication between the LEGO Group and the 13+ community and between the different parts in the community. So that takes a lot of my time. Beside this I organize workshops and cooperations between the LEGO Group and the community, answer a million questions from AFOLs and colleagues and also watch out that both sides get something out of cooperation. So basically imagine everything you could think about that could happen/asked/done between the LEGO Group and the European/Asia Fan community and then you know what I am doing ☺

HM: Why did LCD change the method of election of the LEGO Ambassadors?

JB: Because we felt some people tried to become an Ambassador only for themselves and not necessary speak for their community and also because we felt that the community would lose interest if they not could nominate their Ambassador. It is very important for the program that the participants know they represent their community!

HM: What do you think about our community?

JB: That is a kind of strange questions – of course I like your community very much and think it is a active community – not very big – but Spain is also not a very LEGO penetrated country. You doing a very good event and you have some very good builders - not to name the Arvo Brothers who I would consider as some of the best builders in the world.

HM: Are our Community known inside the Company?

JB: I think the employees who know about the AFOL community and are dealing with Iberia are definitely aware of your community.

HM: You gave your support from the beginning of this magazine. Are you happy with the results?

JB: Yes – I think it is important for a group to have a kind of media they can have in their own languages and that is about their hobby. And it is always nice to have something beside the Internet – I am very happy with the results – all people involved in the Hispabrick magazine are doing a fantastic job – it is a beautiful magazine and now – since it also comes in English I can read the articles and not only look at the fantastic pictures – but I hope to learn Spanish at some point so I can read it in the original language.

HM: Did you play with LEGO bricks when you were a kid?

JB: Yes – I did! And still playing ☺. I had as a kid a decent LEGO collection and I loved playing with LEGO bricks. I got small sets in between and big ones always for birthday and Christmas.

HM: Your most-liked LEGO Theme

JB: Not sure if you consider that as a theme but I really liked/like LEGO Light and Sound.

HM: One which you don't like

JB: I must admit that I am not much into Bionicle.

HM: Your favourite set

JB: 6970 Beta 1 Command Base – I had it as a kid beautiful set and so much play value.

HM: Your favourite MOC

JB: Actually – I really love the headphones the Arvo brothers created – it looks so real that if I step 1m away I would plug them into my iPod ☺.

HM: Do you want to say anything else?

JB: I would like to say thank you for all the work and all the enthusiasm of the members of HispaLUG and you do a great job – please continue the very good cooperation and I am very much looking forward to the next event in Madrid in December.
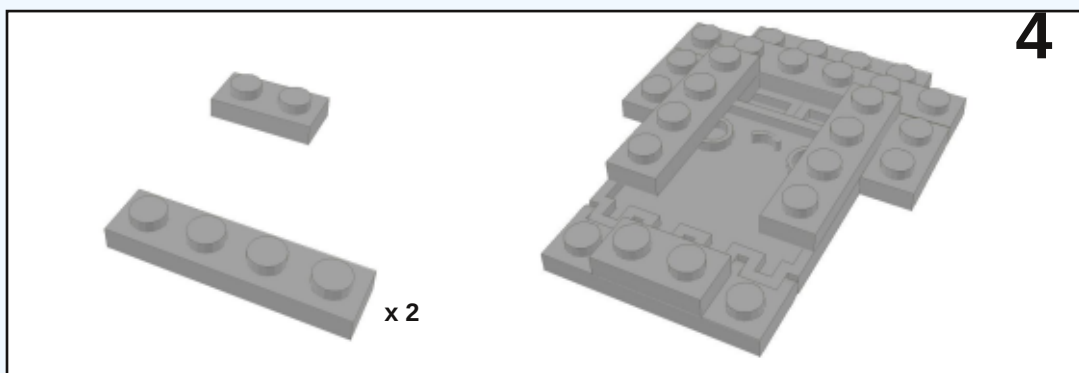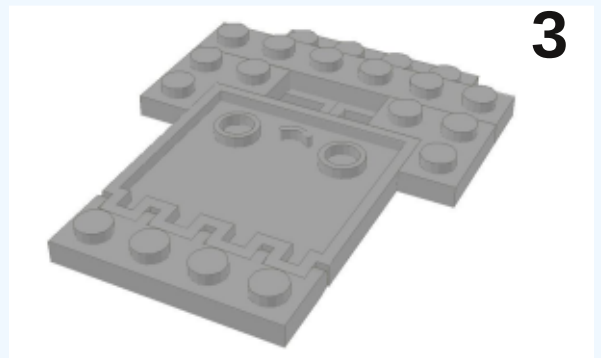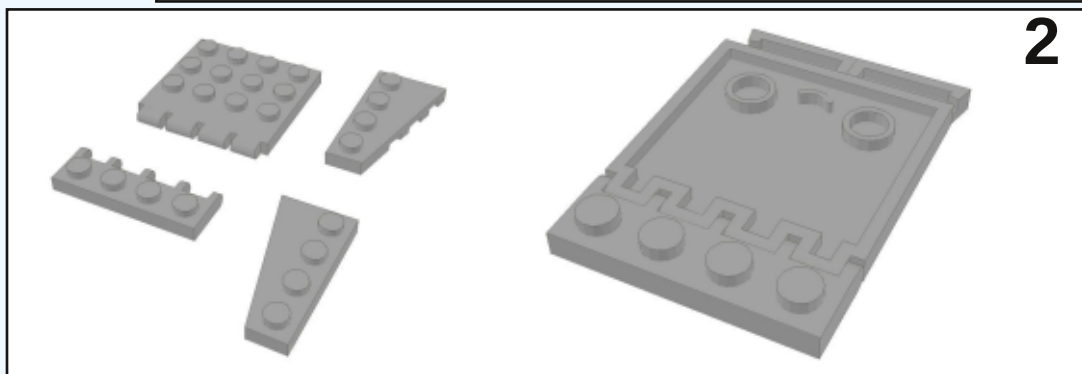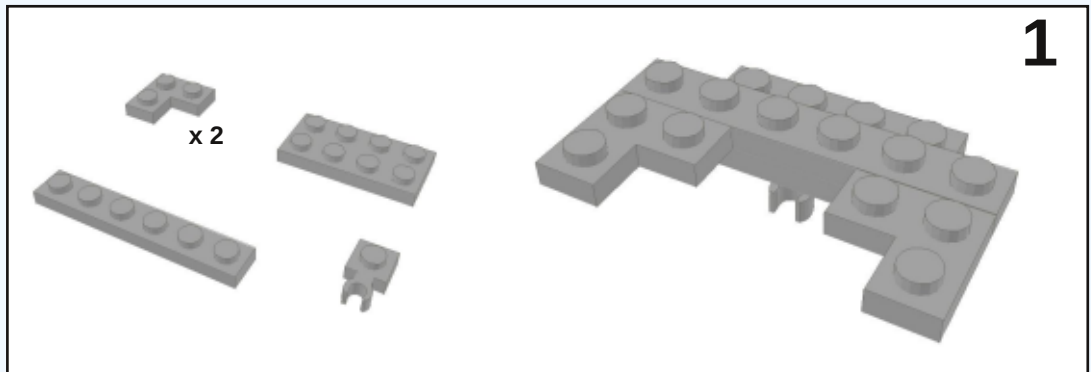
HM: Many thanks for giving us your point of view about the Fan Community

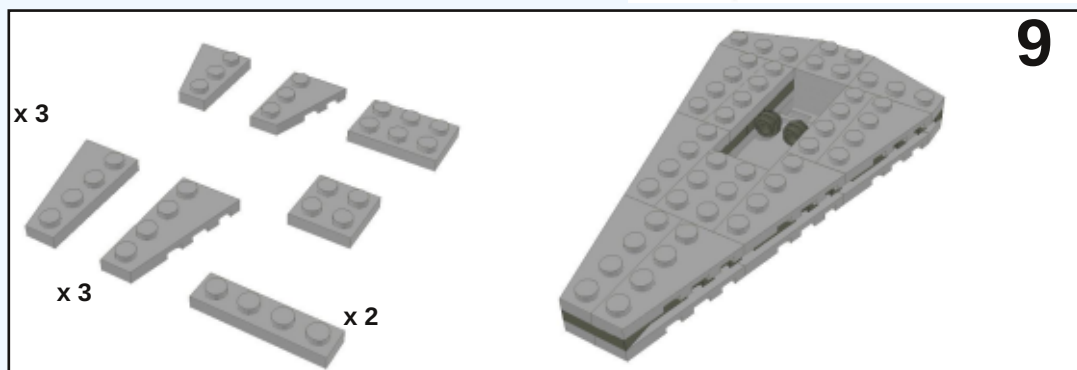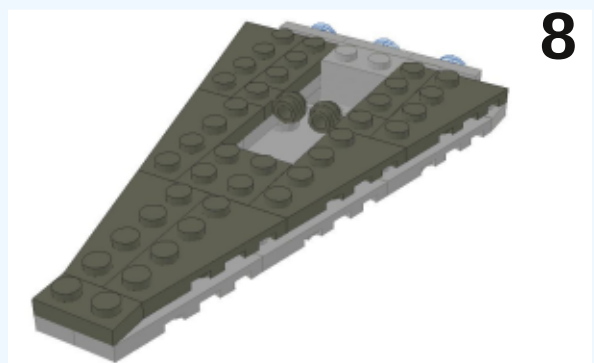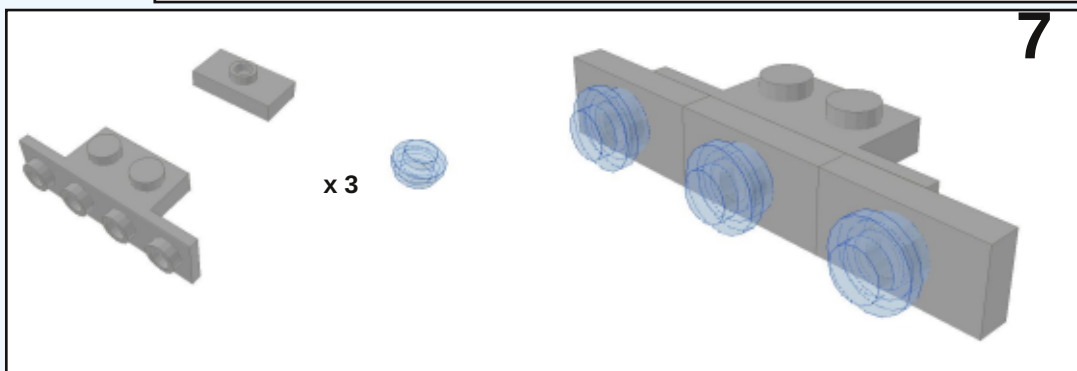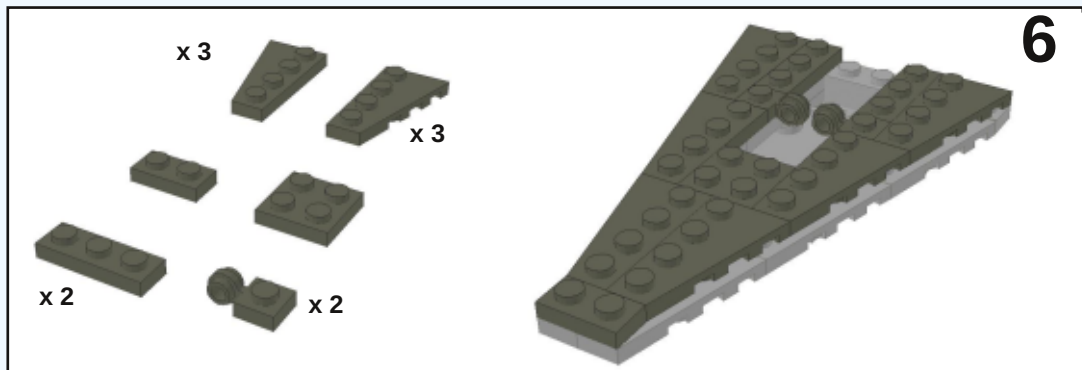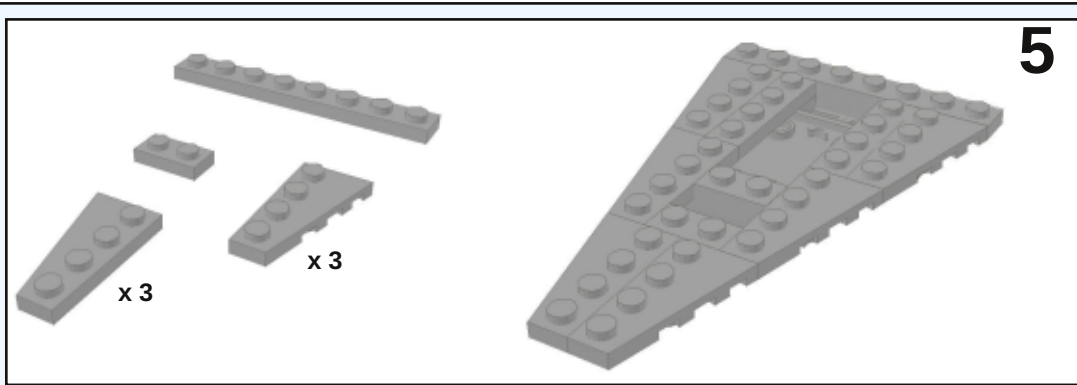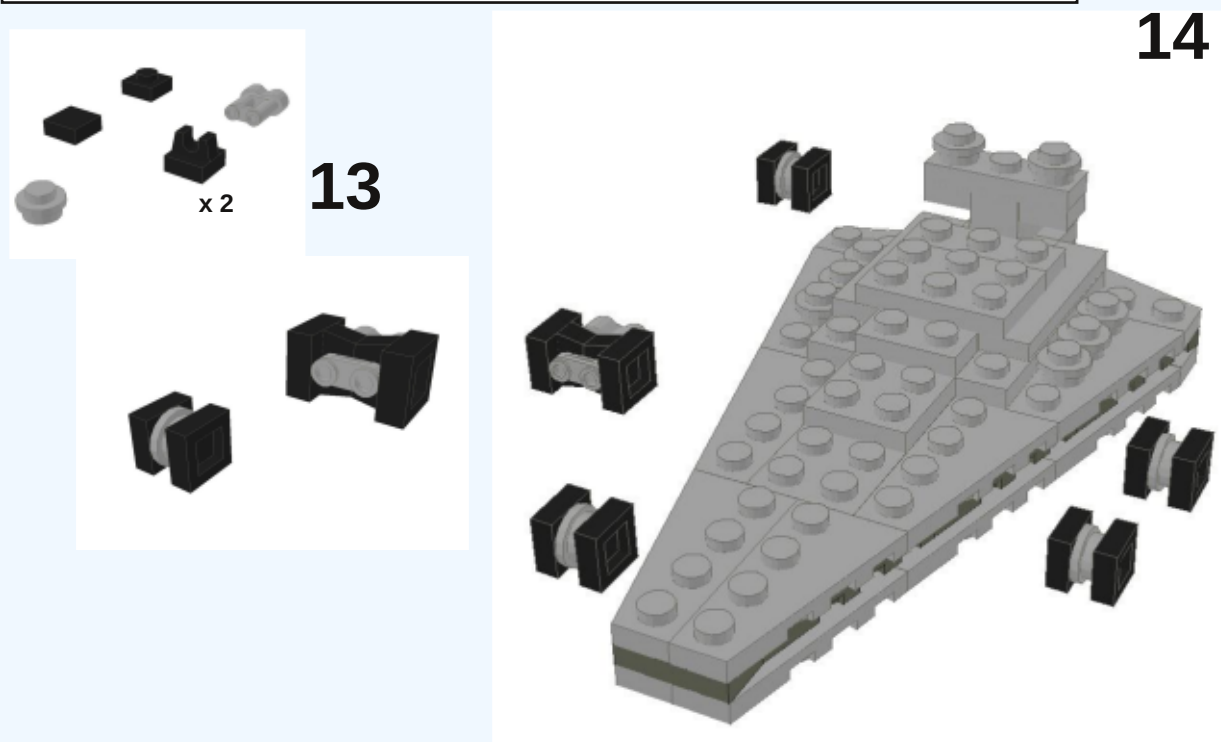**JB:** Thank you very much.■

Mini-Imperial Star Destroyer

Terrorizing the mini-galaxy since a long long time ago

By Legotron

5

x 3

x 3

6

x 3

x 3

x 2

x 2

7

x 3

8

9

x 3

x 3

x 2

10

x 2

x 2

x 6

11

x 2

x 5

12

x 2

x 2

x 2

14

13

x 2
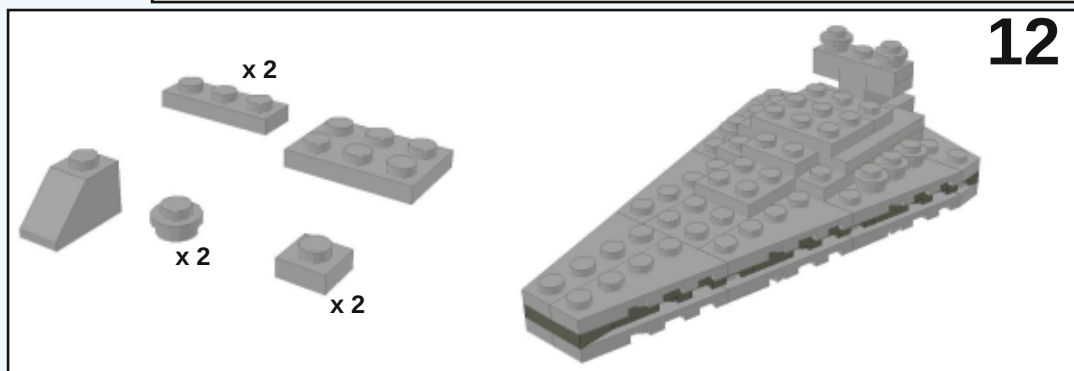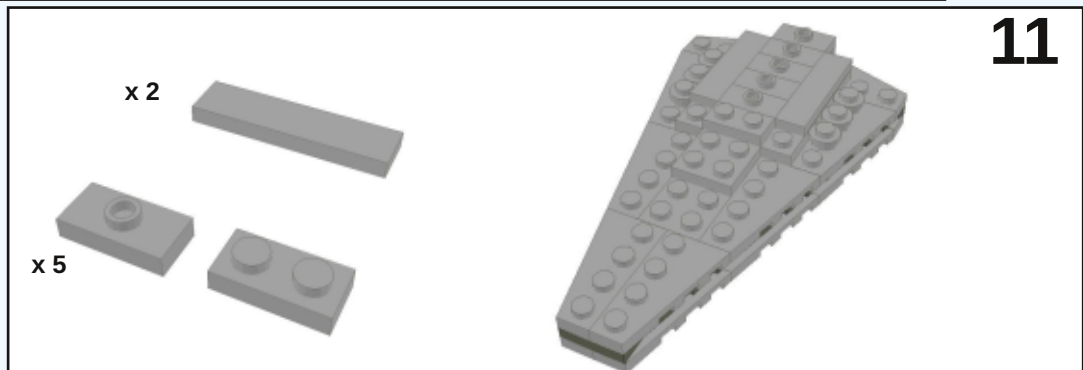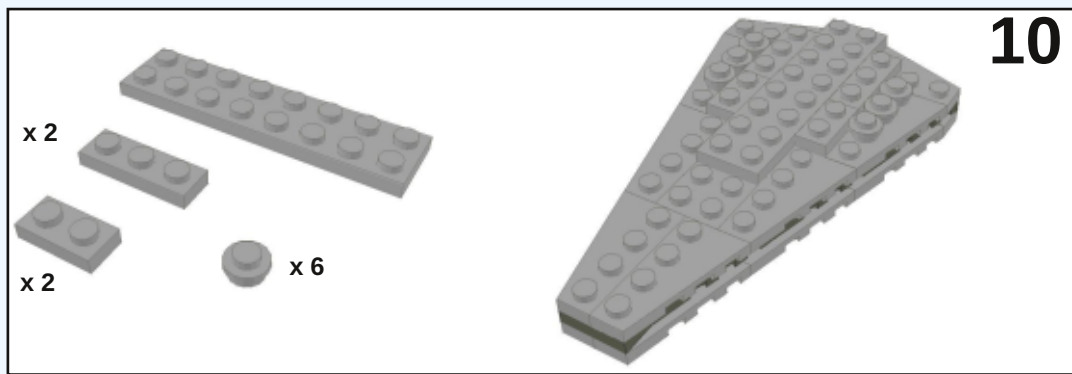
Xuventude Galiza Net 2009

Text by car_mp

Pictures by lluisgib

From the 3rd to the 5th of Aprill 2009, the Xuventade Galiza Net - a computer science themed event for young people, organized by the Vice President of Equality and Welfare of the Xunta de Galicia - was held in Santiago de Compostela. HispaLUG was invited to participate in the event by having a stand that could go along with the other activities. The meeting was held in "Multiouso Fontes do Sar", located in the outskirts of Santiago de Compostela. The Multiouso building was divided into two main parts. The gym was turned into a place they called "The Intranet", a place for the participants in the event. The entrance and corridors were the "The Extranet", a place for all the stands and other activities. And outside of the building, they also built some tents that were used for resting and eating.

Some HispaLUG members (Ricardo, Pedro and Carlos) arrived on Thursday evening, in order to organize the location and orientation of the stand. Placed next to the main entrance it ensured a big influx of public. After a seafood based dinner (couldn't be any different way) we went to the hotel to rest before the "battle" that was waiting for us. Early on the next day, our very own ambassador Lluis joined us and together we built up the stand.

The front table was filled with StarWars™ sets (including the Death Star™), Indiana Jones™ sets, a street showcasing modular buildings (Green Grocer, Corner Café etc...), The Medieval Market Village and, last but not least, the heads of Bender, Zoidberg and Mazinger Z. On one of the side tables, we had boxes filled with parts that people could build with, and on the other one 5 computers, used for contests and LDD and MINDSTORMS demonstrations. And in the back of the stand, a screen connected to the ambassador's computer showing different LEGO® video ads.

On Friday afternoon, our last member Antonio arrived carrying his gigantic hangar. We made space for it the best we could, but once fully assembled, it became the star of the stand (in a different article in this issue we'll show you why). Friday was a relaxed day. We had enough time to check around the whole place, browse the net with the computers provided to us, play a couple of races of Scalextric® (they weere right next to us...), play a few rounds with the consoles, and of course some friendly chatting with people around our stand. Nothing made us foresee what was going to happen on the next day.

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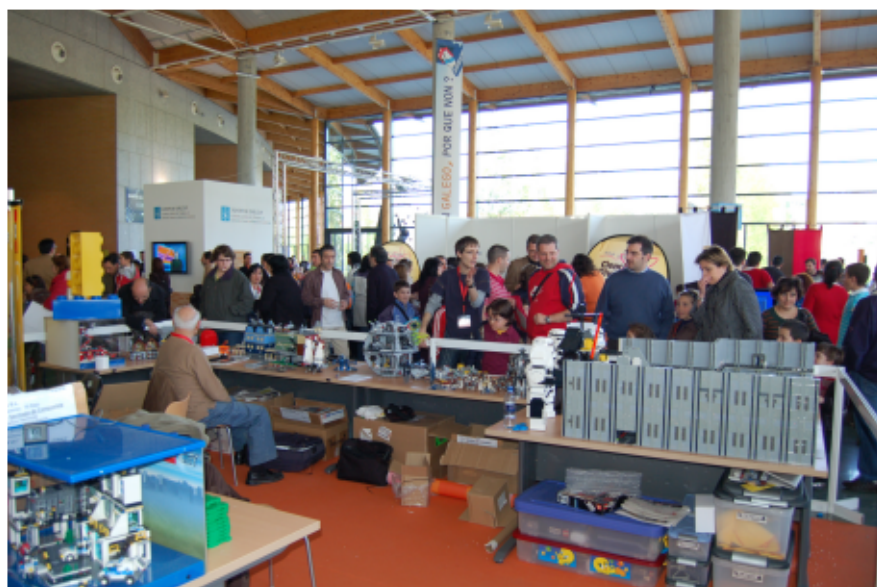
Saturday started slow and relaxed. There were more people compared to Friday but not too many, so we decided to start building the mosaic of the organization's logo they had asked us to make. I'll tell you that weeks after the event, I still suffer at the sight of an orange piece... and it took days for my fingers to come back to their normal size, and the fingernails... I'd rather not go into detail. At the end we were missing some 1x1 pieces we asked for, so we had to remake the mosaic on the go, and around lunch time we finished it. And just as the mosaic was done, peace was gone. Without knowing why, everything started getting filled with people. We were busy trying to attend everyone, but on top of that, we had to organize contests, pay attention to the kids playing with the parts in the boxes... But the real rush hour was about to come. When the movie started playing in the theater, it turned into chaos. It is a miracle no accidents happened.

After experiencing Saturday, Sunday felt like breath of fresh air. There were lots of people, but everything was more relaxed. After packing everything, some of us went back home, while the others decided to visit Santiago de Compostela.

In summary, a well built stand with many resources, filled with LEGO® and people to interact with. Our ambassador became a media star giving interviews for the radio, papers and television. Antonio's hangar became the most photographed "attraction" of the event (even though he kept mentioning he couldn't show the whole thing due to lack of space). And we got to know some new AFOLs, even converted some of them (without much effort). A good LEGO experience overall.■

VII Collectors Fair at Mungia

LEGO® stand at the VII Collectors Fair at Mungia, Vizkaya (Spain)

Text and pictures by Legotron

O On April 25th and 26th, 2009, the VII Collectors Fair was held at Mungia, Vizkaya (Spain), organised by Bitxikiak Association (www.bitxikiak.org). Once more, there was a LEGO® stand, presented by A.Bellón (Legotron), from HispaLUG. Thanks to its perfect organization, the stand was admired by numerous visitors interested in the many different details that were present in the models on display.

The stand, which showed differnt StarWars™, Castle and military vehicle MOCs, was made up of nearly 35.000 pieces. Among the constructions presented at this fair, the most important one was the StarWars Imperial Hangar, a 208x144 stud construction that raised great enthusiasm. There was also a large collection of TIE™ ships, minifigs and some sculptures of the most important characters of The Empire from Classic StarWars.

The rest of the exposition consisted of a medieval scene of a fortress near a village, of almost 9.000 pieces, that pleased all medieval theme fans. Finally, some World War II military vehicles were shown, including a Panzer IV tank , a Sturmgeschütz IV tank, and different SdKfz 251 halftrack variations∎

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EZ IKUTU
NO TOCAR

The most wanted from LEGO® Star Wars™

By car_mp from the opinions gathered from the HispaLUG forum

During these past 10 years, we've seen a big amount of sets and minifigs from this line... but which are your favourite ones? These are the favourites of the Spanish community.

Best set:

The most voted was the 10179 Millenium Falcon™, 6212 X-Wing Fighter® being a close second. Of the prequel trilogy, 7676 Republick Attack Cruiser™ received the most votes.

Best minifig:

The most voted minifig was Darth Vader™, followed closely by the Stormtrooper™.

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
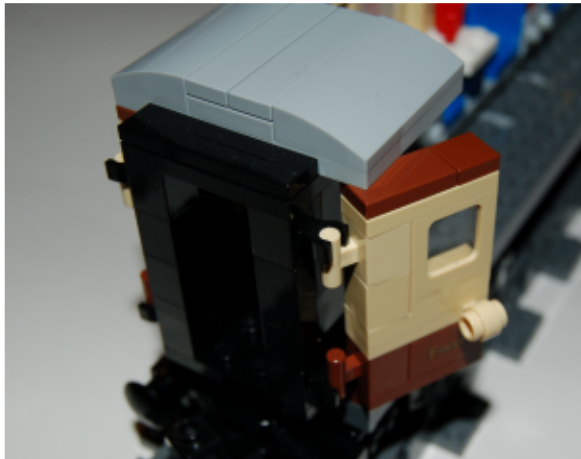
gears that perform the multiplication (1 turn of the motor equals 2 turns of the axle) are inside the firebox. The wheels are new and have a groove to place a rubber to avoid them slipping of the on the track. There is a curious detail . Talking about the three axles, only the rear axle is the one which 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 infra-red 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
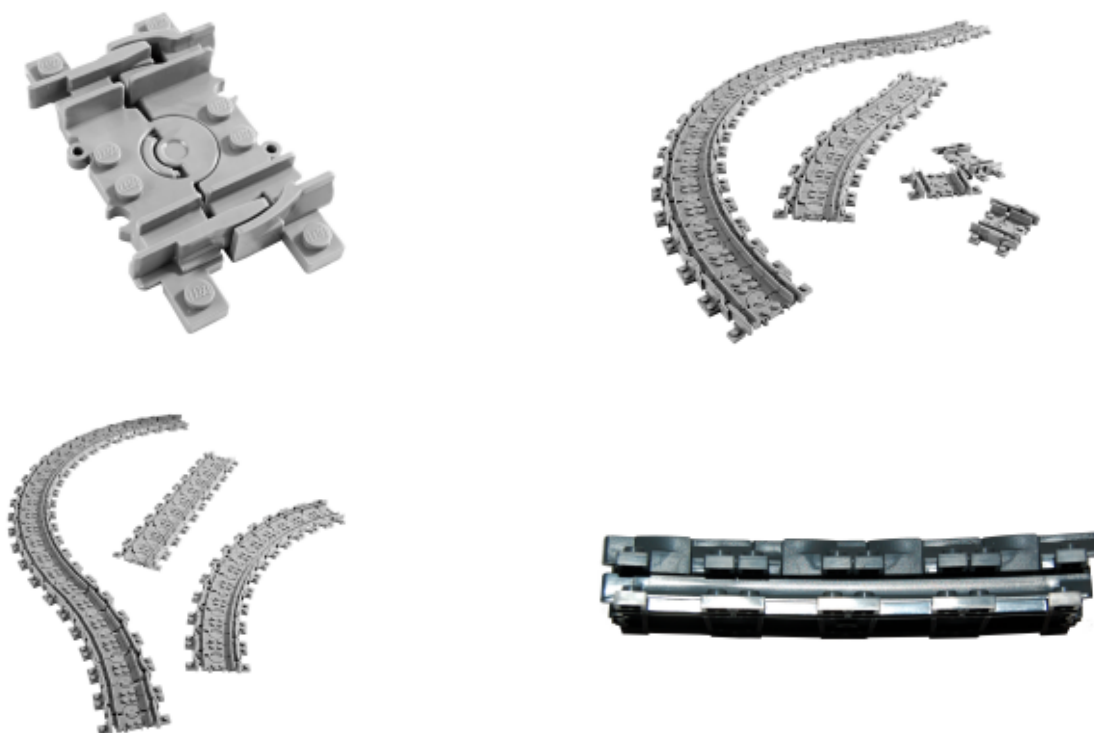
to a standard straight track. The minimum radius is equal to the RC track radius.

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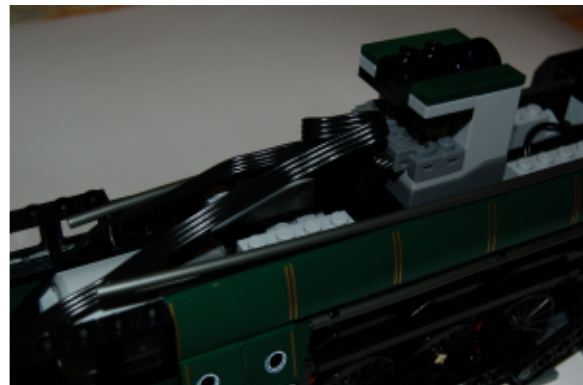
the coming months we will see if there are any problem at LUG events.

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 Developement Manager for provide us this set.
LEGO Iberia SA for the official images. ∎
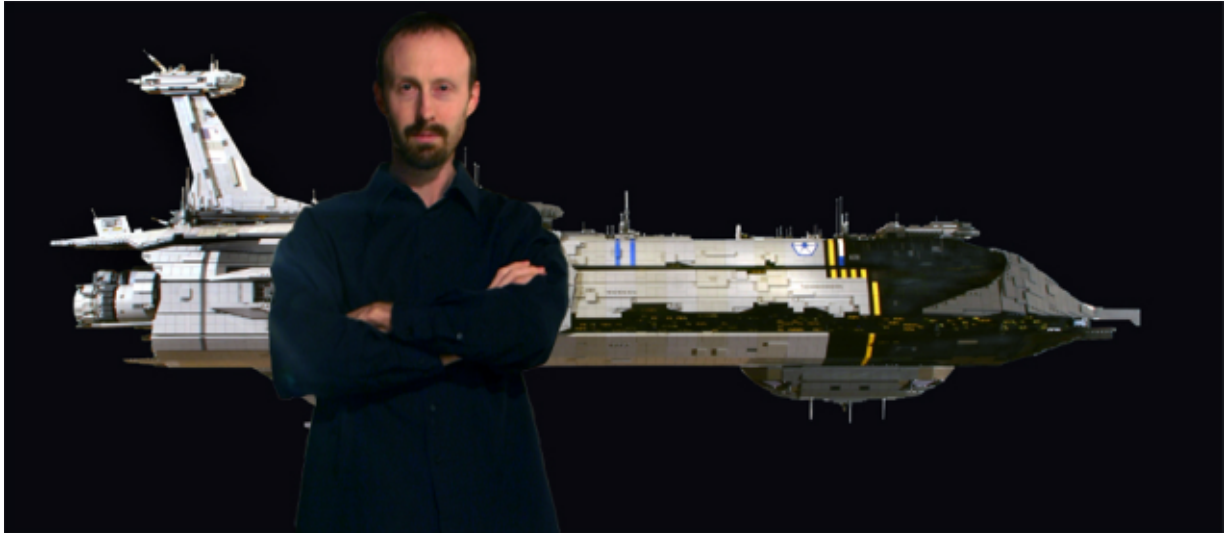
Great creators of the world: Mark Kelso

Known for his awesome replica of the 'Invisible Hand', today Mark Kelso will tell us about his hobby and the strong links it has with his everyday job.

By Hispabrick Magazine

Pictures by Mark Kelso

Hispabrick Magazine: Name?

Mark Kelso

HM: Age?

MK: 41

HM: Nationality?

MK: United States

HM: What do you do normally?

MK: Professional Artist

HM: When did you first start building with LEGO®?

MK: I might have gotten my first set around age 7 or 8. I think I stopped collecting as a kid when I was maybe forteen or fifteen.
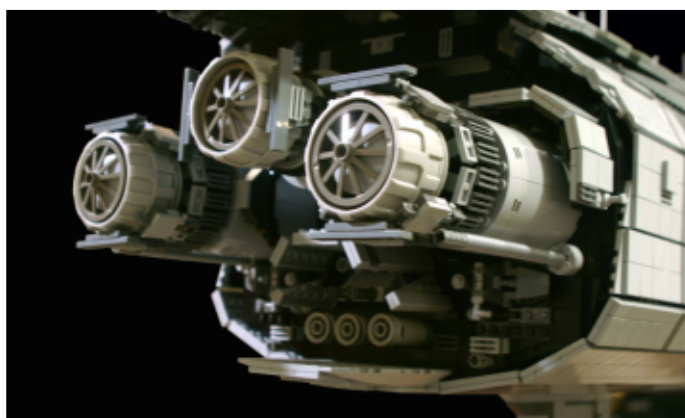
HM: Your first set?

MK: Can't remember the specific number, but it was a small Lear Jet.

HM: And your last set?

MK: Last set before my dark age was 6080 King's Castle. But if you're including my collecting these days, I just recently purchased Medeivel Market (Killer set, by the way!)

HM: ¿Your favorite commercial LEGO building theme?

MK: Boy, that's a tough call… I'd have to say either Star Wars™ or castle. The UCS sets have been fantastic. But I also I love castle work, and I hope to do some larger castle themed MOCs in the future, so that theme is also close to my heart.

HM: ¿And your favorite non-official building theme?

MK: I'm not even sure it's really a theme, but I love seeing good landscape work!

HM: What is your favorite LEGO® element and why?

MK: Again, a tough choice. I suppose most might say the minifigure, but I'm a huge fan of the no-studs look, and without tiles, it would be nearly impossible… so I'm going to have to go with the tile.

HM: Which part would you like LEGO to produce?

MK: In keeping with my thought above, I would give just about anything for Lego to provide us with some wedge tiles. A builder can achieve very similar appearances with either tiles, or the sides of bricks, but when you build as large as I like to build, thousands of bricks really start to create problems due to the weight and clutch strength. Plating seems, in my experience, a bit stronger, and prefering the no-studs look, to have a wedge tile that could cover the studs on a wedge plate… ahhhhhhh, sheer heaven!

HM: How many hours do you spend building with LEGO?

MK: NOT ENOUGH!!!!

HM: What does your family/friends think about this hobby?

MK: My friends absolutely love seeing the MOCs. My wife, however, not so much. To her I think it's still just a child's toy. She knows how much I love the hobby, though, and makes an amazing effort to be supportive. But I can tell inside she's rolling her eyes and thinking "this guy's nuts!"

HM: In real life you work in visual arts. How does that influence you as an AFOL?

MK: Being an artist is much more than just something work related. It's me through and through. It's my way of living and perceiving the world. As a result, I bring the same visions to my LEGO creations that I do to my paintings. I've had formal training, though, and that certainly helps when it comes to building. I'm always thinking about lighting, color, composition, textures, and how fundemental visual elements will play into people's perception of what I'm trying to create. There are also simple things that come into play from my training as an artist as well… measurements and the like, which help with proportions. I suppose the best way to say

it, is that my LEGO creations are my art as much as my paintings. It's just a different medium for expression.

HM: Do you draw or pre-designs before you start building?

MK: Probably not as much as I should, although concept sketches are fairly common. But they're never very specific. For me, when it comes to building, I prefer to just dive right in and work through any problems as they arise. It might be more challenging that way, but I love the hands-on approach to building. Besides, I get enough drawing from my day job!

HM: One of your styles as an artist is photorealism. De you apply that search for detail to your MOCs?

MK: Absolutely. Again, it gets back to me just being true to my own nature. I'm very detail-oriented, and with LEGO® I'm constantly striving to find better ways to use parts in order to achieve the most believable or realistic effects possible.

HM: In your "Apocalypsis" project you mix several LEGO® scenes with painted scenes. How did that project come about?

MK: You're asking for trouble, when you're asking about my Apocalypsis project. I could go on and on, but I'll try to contain myself here…

I wanted a mythological story, and a visual appearance to the whole project that seemed etherial and somewhat disconnected from reality. As that thought continued, I began to search for a method of presenting the story in a way that would reflect an other-worldly feel. At some point, I realized I could enhance the whole experience by combining mediums (LEGO , writing, music, and computer graphics). Once that notion caught on, I really rolled with it. The toughest part for me is finding the proper balance between the mediums to achieve the desired effect. At this point, I'm about a third of the way through the project, and I'm having more fun with it than anything I've created before (including my professional paintings). The first chapter has been pretty well received, and I'm really looking forwad to sharing the story with others, and getting their thoughts, particularly as it progresses and gets to the really good stuff!

HM: How do you go about a project the size of the "Invisible Hand"? How do you choose the scale? How do you manage to stay interested in a project of this scale? And most importantly, where do you find the time?

MK: Oddly enough, those questions are easily answered, and come down to very pragmatic reasons. Size is limited to the width of my door, the

size of my van, and the length of my table at the moment. I'm considering larger projects in the future, though. I'll need to invest in a larger table and start considering models that can be broken down into modular segments for transportation.

Staying interested in long-term projects comes fairly easily to me, because of my detail-oriented personality, but the best way for me to be sure I finish a project is to post a WIP or two on line. Then I know people are expecting to see it finished, and I'm given that extra incentive to see it through.

Where do I find the time? I don't... otherwise you'd see a LOT more work from me! ;). The best I can do is to work mostly in the late evenings. Often after my wife has gone to bed, I'll stay up and build for a while. It's a great way to wind down from the day's stresses and do something creative that isn't influenced by the need to sell it or to finish by a certain deadline (which is ALWAYS the case with my paintings!).

HM: How long does take you to get from the idea to the finished model?

MK: Each project has it's own identity. Some go quickly and smoothly, some are nothing but challenges from beginning to end, taking a good bit longer. Also, I may sit on an idea for a year or two before jumping into building it, and so that aspect alone can differ immensely with each idea.

HM: Why did you select the "Invisible Hand" since it is not one of the mythical ships?

MK: I chose the Hand for a multitude of reasons. I enjoyed the visuals in the third episode, the ship had some color variation, the shape of the ship seemed like it would translate well into LEGO®, there were plenty of reference pictures available on line (as well as numerous shots of it in the movie), and most importantly, I hadn't seen too many of them done at that point.

HM: You have built spaceships from Star Wars™, Galactica™, Star Trek.™... Is Science Fiction a source of inspiration for you?

MK: Very much so. Mystery is where it's at for me. The sci-fi genre is constantly theorizing on the mysteries of life: where we come from, our place in the Universe, other life forms and our relationship to worlds that we have yet to know. Those are the kinds of questions and ideas that I find fascinating.

**HM**: Are you working on any large scale project right now?

MK: My Apocalypsis story is one project that's in the works, and will be for some time, as I'm probably looking at five or six chapters to reach the story's completion. I'm also hoping to begin work on another SHIP in the next few weeks; either a Venator Destroyer™, or the Spirit of Fire from Halo. (I'm leaning toward the Spirit of Fire since I've not seen a large version of that in LEGO®). And finally, I've been talking with a couple of other builders (Brian Kescenovitz and Keith Goldman, if I can name drop!) about a good sized collaborative piece, along the lines of 4 x 8 feet. So, yeah…nothing BUT large scale projects!

HM: The increase of AFOLs and lines like Star Wars™ create new possibilities not imagined before by LEGO®. What do you think about the old school LEGO and the new LEGO?

MK: I'm absolutely stunned by this world of creativity that has risen out of the original concept of building with LEGO bricks. LEGO has continued to mature and divirsify as its early fans have grown from childhood to adulthood. I can't think of anything that compares. Bricks and some plates were enough to satisfy me as a child, but as an adult, my creative visions demand so much more. Yet LEGO has managed to keep pace with those demands by providing a staggering array of diversity in parts, multitudes of themes and building systems, and very importantly, the opportunity for nearly unlimited parts through Pick-A-Brick and Bricklink (I can't stress how significant that is to the hobby). These and countless other aspects of LEGO, and the worldwide circle of builders that work with LEGO, combine to make up a realm that seems to hold endless possibilities as a medium for creative expression… it's a GREAT time to be a fan of LEGO, whether you're a kid or an adult!■

Desmontados

Por Arqu medes
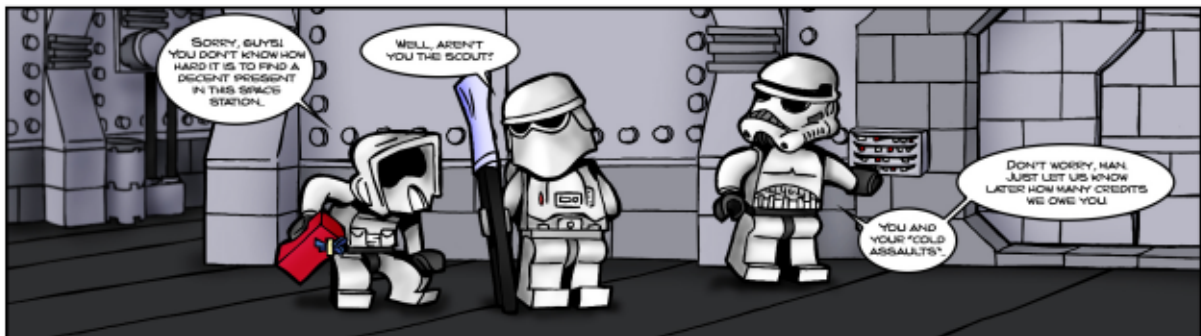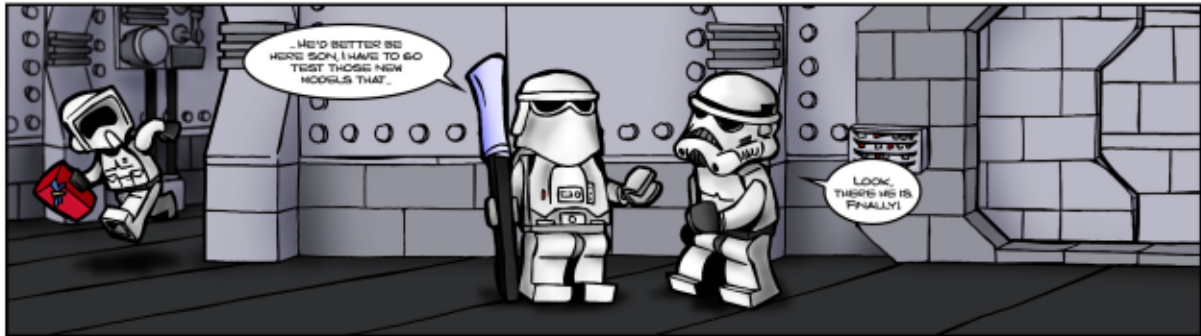
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In the next issue

In the next issue we will give you some advice on how to take photos of your MOCs, and how to keep your bricks clean.
Also, one of our editors will tell us about his wanderings through Europe.

Don't forget that you can find all the latest information about the magazine, along with a few more surprises, online at www.hispabrickmagazine.com■
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magazine

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LEGO STAR WARS 10 YEAR ANNIVERSARY
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ENGLISH EDITION