Brick Journal

Issue 1, Summer 2005

people • building • community

Premiere Issue!

The Ships of 2001
by Jason Allemann

Also:

Builder Spotlights:
The Rev. Brendan Powell Smith and Kieth Johnson

Build Your Own:
3-axle Train Truck and Fire Engine

Event Report:
House of Bricks

Building a 17-foot Bridge

AND MORE!

Volume #1
Issue 1

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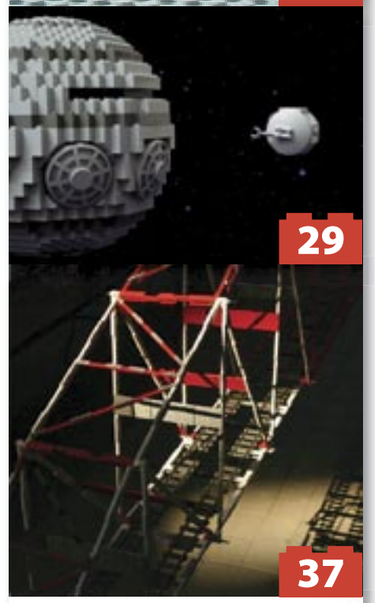

BrickJournal
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Summer 2005
Volume #1, Issue 1

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About the Cover:

Photo of Moses and the Tablets courtesy of The Rev. Brendan Powell Smith.

Photo illustration of Discovery and Jupiter courtesy of Jason Allemann.

Photo of Truss Bridge courtesy of TJ Avery.

Photo of minifigure by Joe Meno.

From the Editor:

Welcome to the first issue of *BrickJournal*! I'm Joe Meno and I am glad to meet you! Every three months, a new issue of *BrickJournal* will be e-published to provide you with the following:

Feature Articles about the LEGO® Building Community
Ever wonder who builds the astounding models that you see online and sometimes on TV? *BrickJournal* will be talking to those people, starting with the person who created The Brick Testament—The Rev. Brendan Powell Smith. We'll also talk with someone who works at Johnson Space Center who trains astronauts... and is a LEGO builder.

Building How-Tos with LEGO Elements
Want to know how to build like a LEGOLAND Model Builder? *BrickJournal* will be showing readers how to build with articles from different builders, from making giant robots to trains and more!

Make Your Own Models
BrickJournal will have instructions in each issue that will show how to build different models with the LEGO bricks you have at home. In this issue, we have instructions to a three-wheel train truck and a fire engine!

Event Reports
Want to see what was displayed at the Morehead Planetarium at University of North Carolina - Chapel Hill? Or who attempted a speed building record in England? Or who was at the fan convention in Chicago? *BrickJournal* will take you there, and in coming issues take you to BrickFest, and other conventions and events!

And More!
BrickJournal will serve as an introduction to the public about the LEGO hobby, while striving to be a place for existing LEGO aficionados to read and learn about fellow builders, construction techniques, and the overall LEGO community. Readers will be able to learn about the creations and creators in the community, and also get a look at The LEGO Group and occasionally, its competitors.

I hope that you enjoy this magazine as much as I enjoyed planning, calling, debating, e-mailing, writing, and laying it out. *BrickJournal* has been a labor of love for everyone involved, and I would like to thank all of those who sent me their words, photos, pictures and good wishes. Thanks especially to Geoff Gray and Jim Foulds for keeping me focused and giving me a kick in the side when I needed it.

And if you want to join us, drop me a line at info@brickjournal.net—articles and ideas are welcome!

Until then, see you online at LEGOFan.org, the online home of *BrickJournal!*

Joe Meno
Editor

Welcome!

Welcome to the world of the "AFOL," otherwise known as Adult Fan of LEGO® bricks for short. The plastic construction bricks made by the LEGO group since 1949 have become an internationally known icon to children and adults worldwide.

The beauty of the LEGO brick comes from its simplicity. It's not what the brick does, but what you do with it. You are limited only by your creativity. Did you know that Jonathan Gay, the creator of Macromedia® and Flash®, cites LEGO bricks as his earliest design influence?

As a child, your first LEGO sets were probably gifts from friends, parents, or relatives. Chances are, once built, you couldn't wait for the next one. Trucks, airplanes, buildings, robots, spaceships, castles, and the like—this multi-colored creation was yours! You made it yourself, what could be better? You could make anything! Playing with friends (and in some rare cases, parents), you could always sit around a pile of bricks and show off what you made. Stack up some LEGO bricks—what is it? Ask a child, you may hear: "it's a skyscraper!" or "it's a big laser." The responses are as varied as a child's imagination. When children play with LEGO toys, they don't play by the rules—they make their own.

Through your childhood, LEGO bricks gave you great enjoyment. As years went on, other factors started to pull you away, despite your fondness for these little pieces of plastic. Peer pressure, school, dating, and your own life getting more complicated gave you less time to focus on building. A resounding feeling that LEGO toys were "not cool" started to be more common. Over time, your bricks got less and less attention. They may have been sitting in the bottom of a drawer, sold by mom at a yard sale (oftentimes, to your grief), or even given away to little brothers or sisters. AFOL's call this period of life the "Dark Ages." It can last any amount of time. Some never recover. Some are lucky enough not to experience a Dark Age.

In many cases, it's a sense of nostalgia or parental duties that bring us from the Dark Ages. Getting older, you may have gone to college, gotten your degree with a nice-paying job, and more disposable income. You may have gotten married and had children. One fateful day, you noticed a new LEGO store at the mall, took the kids to a train show, or took a wrong turn at the store and wound up in the LEGO aisle. Remembering your childhood enjoyment of those now-lost bricks, you say "Wow, LEGO sets have changed since I was a kid!" Maybe it was your crying child. Perhaps you're a die-hard Star Wars®, Harry Potter®, or Spider-Man® fan wanting a collector's item. Regardless, you buy it. As you build your LEGO set, you recall building as a child. Life was so much simpler then, wouldn't it be nice to relive, just for a little while? When done, proudly looking at the set, you have an uncontrollable urge to show it off or zoom it around the house. Maybe you'll tear it down and make something else! Oddly enough, did you feel that sense of satisfaction of making something all over again? If you did, chances are, you'll get another set.

Don't be ashamed— you've just emerged from your own "Dark Ages," you're not alone. Chances are the other adult in the toy aisle just might be an AFOL too. Thanks to the internet, more AFOLs are finding each other and getting organized. AFOL clubs have formed to show off LEGO creations. The fanbase is steadily growing too—conventions have sprung up around the country (and world) where fans from all around the globe meet up and enjoy each other's creations and friendships—all because of this amazing little plastic brick.

Have you enjoyed building a LEGO set? Want some building tips? Have children who build incredible creations? Curious about the AFOL "culture?" Sound like something you would like to be part of? If so, read on—we welcome you with encouragement and open arms.

Welcome to *BrickJournal*. We're glad to have you with us.

by Scott Lyttle

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Scott Lyttle (right) and Kjeld Kirk Kristiansen, the owner of The LEGO Group. Photo courtesy of Scott Lyttle.

Ever since Scott Lyttle got his first LEGO set (set #487, before age 5), Scott's been hooked on LEGO bricks. He entered his Dark Age somewhere around 1990 when he was in college. He emerged from his dark ages in 2001, after a friend "dragged" him to the local Atlanta LEGO outlet. Six months after that, he started working at the new Discover Mills Outlet. His enthusiasm for the product was clear when he was selected as a LEGO Brand Retail trainer. Scott's LEGO interests are in Space, Town structures, sculpture, and trying to put LEGO bricks into directions and angles that aren't usually thought of.

Short, but Sweet

by Jim Foulds

"Revenge of the Brick" premiered Sunday May 8, 2005 at 7pm EST on the Cartoon Network. The program was a CGI animation that ran for 5 minutes. It was created by Treehouse Animation in conjunction with the LEGO Group. Due to the length of the program, there was less of a focus on story, with more focus on action. The dialogue was limited, but there was plenty of action to be seen. The action was split into two primary locations. One was in orbit around the planet Kashyyk. Anakin and Obi-wan were flying their starfighters against wave after wave of Tripod fighters and Vulture Droids as they attacked a Trade Federation Droid Control Ship. The second location was in the jungles of Kashyyk where Mace Windu, Yoda, some clone troopers, and a band of Wookies were busy fighting an army of battle droids.

The animated short was definitely a marketing tool since every LEGO Star Wars set being released this spring was highlighted in the program. There were several sequences where the idea of building something else from the pieces in a set highlighted. One sequence showed Anakin assembling a bi-plane from the remains of his destroyed ARC-170. After not liking this, he reassembles the pieces into a new flyer. Following this, Obi-wan is shown using the Force to deconstruct enemy fighters and using the pieces to fix and upgrade his own fighter. One of the surprising uses of LEGO Bricks was when a Wookie constructs a rocket launcher to take out an approaching tank. Given the LEGO company's attitude toward portraying weapons, it was surprising to see that this sequence actually made it to air. One of the more interesting choices made for this program was to allow the mini-figs to wield realistic Star Wars weapons rather then the loud-hailers that come in the sets. The weapons displayed were more reminiscent of the accessories produced by the "Little Armory"—www.littlearmory.com.

Overall, the program offered a very fast-paced action sequence that assuredly thrilled the kids at heart. It was definitely visually eye appealing since it is not very often that you get to see your favorite LEGO mini-figs come to life through animation. The biggest criticism of the program would be its length. If there were to be a another program similar to this in the future, it would be fair to say that kids and adults alike would like to see it be longer. If you missed it on the Cartoon Network, I recommend that you visit the website to view it: http://www.LEGO.com/starwars/default.aspx or alternatively: http://www.treehouseanimation.com/rotb/

Jim Foulds is a software engineer who lives in one of the many suburbs around Philadelphia, Pennsylvania. Jim returned to the hobby after graduating college and has been an active builder ever since. Jim would rather spend his time in the basement building some creation, but he got roped into the assistant editor position by a good friend so... pay no attention to man behind the curtain!

An Event to Remember

by Jim and Maelee Foulds
Photos by Jim Foulds

Celebration III took place April 21 - 24 at the Indiana Convention Center in Indianapolis. It was definitely the place to be if you were a Star Wars fan! The convention had enough to please whatever type of fan you were.

From the collector to the story expert, the convention had something for you. For a Star Wars LEGO fan, the LEGO exhibit in the vendor area was the place to be. It was hard to miss with the large LEGO sign hanging from the ceiling. They not only had the entire Episode III line for sale, they offered key chains, t-shirts, and even the latest LEGO Star Wars video game. Two large tables were covered with various bricks that encouraged visitors to sit and play. Attendees bunched together and waited for their turn to play the LEGO Star Wars video game. A backdrop picturing a huge space battle scene from the movie surrounded a special display of a Republic star cruiser created by master builder, Erik Varszegi. Posters were being given away to promote the "Revenge of the Brick" cartoon that would be shown on the cartoon network. Of course the highlight of the weekend in the LEGO exhibit was the Star Destroyer build competition that involved eight teams competing for the fastest build record. The group named the "Indy AFOLs" won the event with a time of 1 hour 22 minutes. They were each awarded specially designed Darth Vader badges by a Princess Leia look-alike. The team was also awarded a special Darth Vader statue commissioned for this event.

Regardless of your interest in Star Wars, the convention had something for you. For some it was the special appearance of George lucas himself on Saturday morning. For the collector, the vendor hall was probably where most of the time was spent searching through the various displays looking for that special something from t-shirts to action figures. Various actors from the movies attended the event spending time in Q&A sessions with the audience, as well in the autograph hall. Some of the concept designers and artists held talks about behind the scenes, as well as giving hints about Episode III. There was a special exhibit on the construction of R2-D2, as well as an exhibit showing some actual props from the movies. One of the more interesting exhibits at the convention took place in the actual halls of the convention center. It was here, each day, that various costumed attendees drew crowds around them for pictures and poses. There were various stormtroopers, bounty hunters, and lightsaber wielding Jedi and Sith who probably spent more time posing for pictures, than in the exhibits.

News: Annual Report 2004

In March 2005, Jørgen Vig Knudstorp released the LEGO® Group's latest annual report and a matching press release. According to the press release, "In 2004 we could tell the world: we're back in the game! ," but what do the numbers in the annual report tell us? Is the LEGO Group really on its way to a sustainable recovery—or just further down a slippery slope to irrelevance?

by Mark Jordan

Mark Jordan is a Product Manager currently working and living in Singapore for a large US software company.

A builder of cars, planes and spaceships as a kid in Sydney, Australia, he got back into the LEGO hobby when the Star Wars range was released. He is the proud winner of the 2002 Galaxy Enforcer competition, runs a Bricklink store and is fascinated not just by the bricks but by the business too.

With a 2.5 year old girl and another child on the way, he's currently rediscovering the LEGO experience from a parent's perspective.

The Financial Results

For 2004, The LEGO Group's "bottom line" was a big loss. What does this really mean?

Profit is calculated by subtracting costs from revenue.

Revenue is defined as the inflow of assets that results from sales of goods and services. In other words, it's (mainly) the money that the LEGO Group collects from retailers when they sell LEGO to consumers like you or I. In 2004, revenue fell slightly. Part of the fall in sales was due to the weaker US dollar. The LEGO Group was in no position to raise its prices in the US. At the beginning of the year, selling a $99 4504 Millenium Falcon on S@H brought in DKK591 (Danish Kroner) for the LEGO Group. By the end of the year it only brought in DKK544.

The LEGO Group's revenues were also affected by general malaise in the toy sector. Apparently money spent on kids is more likely to pay for handphone bills or buy video games.

Another reason the LEGO Group gives for weaker revenue is retailers managing their stock more efficiently. If this is true, we can expect to see a slight rebound in sales in 2005 as retailers "catch up" to their lower stock levels.

Cost is defined as the expenditure of funds or use of property to acquire or produce a product or service. The LEGO Group's biggest costs are in raw materials, distribution, and salaries. The LEGO Group made massive cost reductions in 2004. The LEGO Group finished 2004 with 973 fewer staff, closed a factory in Switzerland, and even sold the corporate aircraft.

The supply chain is defined as the sequence of processes involved in the production and distribution of a commodity. Participants in the LEGO Group's supply chain include the LEGO Group itself, contract manufacturers, retailers, distributors, transporters, storage facilities, and raw materials suppliers.

During 2004, the LEGO Group worked hard on improving efficiency in the supply chain. Inventory Turns, an important measure of supply chain efficiency, improved by about 25% over 2004.

Another measure of efficiency is revenue per employee. In 2004, The LEGO Group's revenue per employee improved substantially—finishing at almost the same level as Mattel.

Profit is the income after all expenses and taxes have been deducted. The profit is what is left for the owners at the end of each year. If a company makes a profit, the owners have the choice of keeping it themselves (as dividends), or reinvesting it in the company.

In 2004, the LEGO Group reduced its costs so much that it would have made a profit, except that it had to pay for mistakes made in previous years.

	The LEGO Group 2004	The LEGO Group 2003	Mattel 2004
Revenue (US$1000s)	$1,156,842	$1,241,742	$5,102,786
Employees	5,569	6,542	25,000
Revenue per employee (US$000)	$208	$190	$204
Inventory Turns	9.4	8.7	12.2

A Change in Strategy —Shape Up or Sell Out?

In 2002, the LEGO Group's strategy was based on growth—"to make LEGO the brand name with the best recognition in families."

After a precipitous drop in sales and a big loss, the 2003 Annual Report laid out a change in strategy. The new strategy was to build a stable business around LEGO's core products—"... the Company's more timeless core products that are in general demand because of their power to stimulate children's creativity and learning."

In 2004, the new strategy was refined—"... the LEGO Group to concentrate its efforts in the future on its basic, classic, and universal product idea: LEGO bricks ." An action plan, whose objective was to "return the LEGO Group to profitability and financial stability and at the same time to keep the Group in the private ownership of the Kirk Kristiansen family"was developed.

Elements of the action plan include:

- "Set clear direction for the LEGO Group and fundamentally change the way we do business." This translates to making individuals in LEGO understand better about what they need to do, and make them accountable.
- "Restore competitiveness by focusing on customers, in particular their profitability." Yes, it's the retailers, stupid. As AFOLs, many of us have heard anecdotal complaints from retailers about dealing with LEGO and the difficulty of making money selling LEGO. Now it seems that the LEGO Group has heard this feedback too.

"The product range must be in keeping with the core idea of the brand. This means sharpened focus on such classic product lines as LEGO DUPLO, LEGO Make & Create, the classic play themes (e.g., LEGO City), and LEGO Technic." This needs no explanation. It's funny how this corresponds so closely to what many AFOLs have wished for over the years.

"Reduce the level of risk by right sizing our activities, cost base, and assets to a lower revenue base"—recognising that sales aren't going to increase substantially any time soon, the LEGO Group needs to cut costs to match. Cost cutting continued in 2004. A large number of LEGO Group staff were made redundant; the LEGO Group finished 2004 with 973 fewer people. Redundancy and other restructuring costs totalled DKK502M. Plus, the LEGO Group was forced to recognise that some of its assets were worth less than previously thought—to the tune of DKK723M. If it wasn't for these costs, the LEGO Group would have made a modest profit in 2004.

May I Buy The LEGO Group?

In 2005, the LEGO Group expects to make a modest profit. If it doesn't, there will be renewed pressure on the Kristiansen family to sell out. A family company that continually makes losses isn't worth much to the family. March 2004's action plan included a specific objective to make the LEGO Group profitable and stable so that it could be kept under family ownership.

But what if the action plan doesn't pay off? What if the Kristiansen family does want to get out of the toy business? Most AFOLs would feel uncomfortable if the LEGO Group was bought by Mattel, Hasbro, Tomy or some other company. If the unthinkable happens, would it be possible for AFOLs to club together to buy the LEGO Group themselves?

Let's assume the LEGO Group can make DKK700M profit on DKK7000M of sales each year. This is similar to Mattel's profitability. If we then assume that the LEGO Group would be equally attractive to investors as Mattel, the LEGO Group would be worth just over DKK9000M.

But this doesn't take into account the LEGO Group's special relationship with Kirkbi AG and Kirkbi A/S—two other Kristiansen family companies incorporated in Switzerland. Kirkbi AG and Kirkbi A/S would probably want their loans to the LEGO Group paid out by any buyer. These loans total almost DKK1000M. And conversely, if I was buying the LEGO Group, I'd want to own LEGO's full portfolio of patents and trademarks. Some of the key ones are owned by Kirkbi AG and Kirkbi A/S. This is why the Ritvik case was prosecuted by Kirkbi rather than the LEGO Group. I estimate a value of DKK500M for Kirkbi AG and Kirkbi A/S's LEGO trademark and patent portfolio.

So if 1,000 AFOLs got together, we'd each need to contribute USD1.8M to own our favourite toy company! I sure don't have US1.8M to throw around so I hope that the new strategy is good enough to keep the LEGO Group in the hands of the family.

Where does my LEGO® dollar go?

2%	Corporate Tax
14%	Cost of Change in Strategy
12%	Overhead and Other Costs
33%	Sales and Distribution Costs
3%	Trademarks and Licensing
28%	Production Costs
8%	Store Markup

In a "normal" year, more tax would have been paid, and the costs of change in strategy would have been profit for the LEGO Group.

A Change in Tone

Reading the annual reports in detail, you are struck by a change in tone over the years. The 2002 report lacks detail, and is full of "management speak" and vague terms. The 2003 report is brief to the point of terseness—and recognises that yes, there is a problem. The 2004 report shows acknowledgement of the problems, and also provides much more detail about what the LEGO Group is doing to address the problems.

2002: Unwillingness to face reality

LEGO Company has high expectations for the product range EXPLORE, once parents everywhere realise the development potential in this outstanding range for their youngest children. EXPLORE products can help stimulate children's development at all its phases. These products have undergone a noteworthy change of nameas a result, such well-known names as PRIMO and DUPLO have disappeared and re-emerged under the portal name of EXPLORE. Naturally, there has been a down side, also in a sales context. But there is no doubt that switching to the new portal structure is the right decision and that it will prove itself in the long term.

2003: Recognition of problem

In 2002, the DUPLO brand was replaced by the new development system for preschool children, LEGO EXPLORE, aimed at creating a simple and accessible system of stimulating play methods for young children. The company failed, however, to persuade consumers of these benefits, and sales of preschool products dropped by 37 percent during the year and now account for approx. 10 percent of LEGO Company's sales. Such sales levels are obviously far from satisfactory for these former top sellers. In 2004, the preschool products will be relaunched under the LEGO DUPLO and LEGO BABY brands.

2004: An honest and direct solution

In 2004, the familiar DUPLO rabbit returned to the front of LEGO sets for the youngest. Since 2002, these sets had been marketed as LEGO EXPLORE, which did not gain the favour of consumers. The LEGO Group therefore took the logical step the end of 2003 and launched the product portfolio for 2004 under its earlier name: LEGO DUPLO. Feedback from consumers and retailers was that LEGO EXPLORE had made it difficult for consumers to find the products they knew and liked. As a result, the LEGO Group's three building systems for youngest users – LEGO BABY, QUATRO, and DUPLO – will now share a marketing platform. The reintroduction of the DUPLO brand was one of the first examples LEGO Group's objective of responding quickly to signals from the market.

News: LEGO®Palooza

Morehead Planetarium, Chapel Hill, NC February 26, 2005

by Joe Meno

The inaugural LEGO®Palooza, took place on February 26 at Morehead Planetarium in Chapel Hill, North Carolina. LEGOPalooza was the first collaboration between the Morehead Planetarium and the North Carolina LEGO Users Group (NCLUG), headed by Joe Meno (event coordinator), with additional support from the Delaware Valley LEGO Users Group (DelVaLUG), Washington, DC and Metro Area LEGO Users Group (WAMALUG), and individual builders. The number of attendees surpassed everyone's expectations! The original estimate of attendees was 200; instead, some 1,000 individuals came to see LEGOPalooza exhibit by the clubs and additional builders.

The centerpiece of the event was the Moonbase layout, which was composed of over 20 modules and corridors, with a center spire and a shopping mall module that was quickly dubbed the "'Crabtree Valley Mall'-dule" after the local mall. Spacecraft filled landing areas of the Moonbase, while a monorail and space train threaded through the entire layout.

Another table was devoted to actual space models—Shane Larson's models of the Cassini probe, Mars Pathfinder, Lunar Rover, and Stardust, as well as Joe Meno's Viking lander and several airplanes. Two astronauts were the central points of this table.

A Star Wars table had models from the collection of Sabrina Gravatt and custom models from Gareth Bowler, which included a Y-Wing, B-Wing, A-Wing, and the Jedi Starfighter from Episode Three. This table, with over 30 models on display from the mini Star Destroyer to the Ultimate Collector Star Destroyer, dominated the show tables.

There were other highlights too: NCLUG's Rafe Donohue demonstrated his ball contraption, which transported LEGO soccer balls in a cycle that included an Archimedean screw, a pachinko board, a zoo maze, and a set of conveyor belts! There was always a crowd watching this contraption going through its paces, and Rafe was a generous guide to the machine's workings.

There also was a table that had Paulo Chiquito and his son demonstrate a couple of MINDSTORMS two-legged walkers. One of the walkers recognized changes in light and reversed direction, thanks to a light sensor, while the other was a simple walker. Both were shown by the Chiquitos, using a laptop to show the programming used by the light-sensitive walker.

NCLUG also had a building area for a contest that was open to attendees. The best LEGO sculpture was awarded a trophy built by Joe Meno and a family membership to the planetarium. The number of entries, just like the audience, surpassed everyone's expectations. The contest garnered over 300 entries, with entrants ranging in age from 3 to 57 years old. The event also got press coverage from two area newspapers and two television stations.

NCLUG also started a scholarship fund at the event, selling minifigures with the LEGOPalooza logo for $2, with proceeds going to the fund. By days end, $130 was raised, enough to admit one child to summer camp at the planetarium. Remaining minifigures were donated to the Planetarium for supporting the NCLUG Fund, which will provide admission funds for summer camp.

LEGOPalooza proved to be a very successful event for the Planetarium, and credit needs to be given to all the participants, from the NCLUG members to all the others who loaned out models for this event. This was a true overall effort that showcased the best of the LEGO community. The DelVaLUG members who helped included Jim Foulds, Tim Caffrey, and Phil Thorne. The WAMALUG members involved was Christina Hitchcock, Robert Gurskey, Magnus Lauglo, and Fradel Gonzales. Other builders included Adrian Drake, Felix Greco, and Shane Larson. The NCLUG builders in this event included Joe Meno, Mike Walsh, Carin Proctor, Adam Skelding, Gareth Bowler, Sabrina Gravatt, Rafe Donohue, David Winegar, Paulo Chiquito, and Samuel Cox. Cary Clark provided monorail track for the layout.

Rafe Donohue's ball contraption

Samuel Cox and the Moonbase

Guests examine the Star Wars® models
Photo by Sabrina Gravatt

Contest entries

Contest Award

Except where noted, all photos for this story provided by Joe Meno.

National Air and Space Museum

Washington, DC April 16, 2005

by Joe Meno

WAMALUG and NCLUG were asked to display at the National Air and Space Museum in Washington, DC for Universe Day, which fell on Saturday, April 16.

Members from both WAMALUG and NCLUG brought in Moonbase modules, spacecraft, aircraft, contraptions, buildings, but most of all, people!

Many thanks to the staff of the National Air and Space Museum, most notably Mychelene Giampaoli and David DeVorkin. They provided us with the support needed to make the event happen, and also some fun stuff, including a tour of the offices after the display!

Also thanks to the members of both WAMALUG and NCLUG who participated: Jeff Stembel, Margaret Keys, Tony Perez, Dan Rubin, Gareth Bowler, Michael Harrod, Derek Schin, Philip Moyer, Rich Schamus, Linda Mateo, Fradel Gonzales, Rafe Donohue (and family), Magnus Lauglo, Galen Fairbanks, Todd Thuma, and Sabrina Gravatt.

Thanks also to Kunie DeVorkin, who built a wonderful model of the Museum, but could not attend because of illness.

There were models built by others who could not attend: Mike Walsh, Geoff Gray, Adrian Drake, Shane Larson, and Felix Greco.

The event was well-received by the public, with attendance reaching over 10,000 that day.

Photos by Joe Meno, Sabrina Gravatt, and Eric Long of the Smithsonian Institution.

News: Universe Day

Coming Soon:

The World's Largest LEGO® Train Layout

National Train Show, Cincinnati, OH

July 8 -10, 2005

Photo by John Bucy

From July 8-10, the world's largest LEGO train layout will be on display at the world renowned National Train Show following the NMRA (National Model Railroad Association) National Convention in Cincinnati. The International LEGO Train Club Organization (ILTCO) has 14 North American LEGO Train Clubs that will combine their layouts into a mind-boggling LEGO extravaganza. On many hundreds of yards of train track, LEGO model trains will make their rounds. Trains speeding around these tracks will range from realistic replicas of classic steam engines all the way to futuristic high-speed concept trains. But that is far from all; the entire 70 x 50 foot supporting display will be constructed exclusively of LEGO bricks. No less than 2 million of the world's most popular building bricks will be used to construct cities featuring 7 foot tall skyscrapers, bridges spanning 10 feet valleys, and many detailed buildings. These colorful LEGO cities and landscapes will be complemented with mountains, castles, cars, agricultural areas, and thousands of little LEGO people.

The National Model Railroad Association (www.nmra.org) is the largest organization devoted to the development, promotion, and enjoyment of the hobby of model railroading. Their annual National Convention is visited by tens of thousands, including many international attendees. Immediately following the national convention is the National Train Show, at which the LEGO layout will be shown. This 3-day show will boast no less than 20.000 sq. ft. of model railroad layouts, as well as hundreds of model railroads associated vendors. It is considered the event of the year for all model railroad fans, evidenced by the huge amounts of people that visit the National Train Show each year. This will be the first year that, under the umbrella of the International LEGO Train Club Organisation (www.iltco.org) with the Central Ohio LEGO Train Club (www.coltc.org) as this year's acting host, this immense LEGO train layout will be shown to the public. For those that will not be able to attend the show in person, be on the lookout for a show report in a future version of *BrickJournal.*

by Paul Janssen and Steve Barile

Photo by Ken Koleda

Paul Janssen is a 37 year old assistant professor at the Ohio State University, Columbus, OH. He is a long-tme avid Lego builder and collector, with trains and town as his major focus. He founded the Central Ohio Lego Train Club, and was recently selected as one of 15 official Lego Ambassadors.

Coming Soon:

Northwest BrickCon 2005

Seattle, WA

October 7-9, 2005

When you think about the Pacific Northwest, maybe you think about vast evergreen forests. Perhaps you think about the Space Needle. What should come to mind, however, is LEGO. The Northwest is a hotbed of adult LEGO fan activity. Eight years ago, fans started working together to form the Pacific Northwest LEGO Train Club, one of the first two LEGO train clubs. Now there are dozens of active builders and collectors working together in the Northwest. The few hundred miles of freeway from Vancouver, BC, to Portland, OR, passes through the territories of no fewer than five active clubs. These fans, and others from around the country, come together every October—for NWBrickCon.

NWBrickCon began in 2002 primarily as a public exposition of LEGO models, together with an opportunity for 30 or more AFOLs from the whole region to assemble for a weekend. The free expo, housed in the Center House at Seattle Center, saw visitors estimated in excess of 10,000. Highlights included the first major Moonbase display and a seven-foot-long model of a car ferry.

The second year, the con moved to a secluded corner of Seattle Center and encountered a scheduling conflict with the 2003 LEGO truck tour and other events, so the expo (now a paid event) saw attendance dip below 1000 visitors. The fan-centered portion of the event, however, increased in popularity. Fan interest grew to 55 con attendees from as far away as the Midwest. 2003 saw the inauguration of the annual NWBrickCon Animated Film Festival, several classes, and a keynote address and Q&A by Brad Justus, then head of LEGO Direct. This last included the first look at the UCS Snowspeeder set.

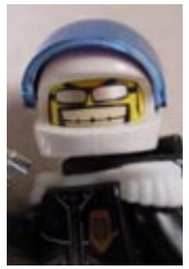
For Halloween weekend, 2004, NWBrickCon temporarily relocated to Federal Way, WA. Attendance continued to rise, to 65 fans, while the public expo drew more than twice as many visitors as the previous year. Attendees enjoyed numerous special events, including a building competition judged by three finalists from the previous winter's LEGOLAND Master Model Builder search, a Dirty Brickster, and a wholly entertaining keynote speech by Aaron Sneary, LEGOLAND Master Builder.

What is NWBrickCon today? An established tradition in the Northwest, the Con is stronger than ever, with planning well underway for NWBrickCon 2005 on October 7-9. This year, the event will return to the central Seattle Center location with a bigger expo, familiar and new special events, and more. The Con offers fans an opportunity to meet, share MOCs, and devote a weekend to a communal LEGO experience. Through the expo, it also offers the public a chance to see what fans from all themes have made from LEGO bricks.

by Thomas Garrison

Photos by Jeff Pelletier, and Brian McLean

NWBrickCon™



Hi there space cadets (and non-space cadets).

I'm Captain Fazoom and I'm here to answer your questions about LEGO, Life, and Lookin' good for that special alien in your life. Not long ago I was a box builder. I built studs up boxy starships thinking I was all that and a bag of norkrind chips. Then something amazing happened. I realized my building was subpar and some folks actually laughed at my weakness and kicked 1x1 rounds in my face. So I joined the AFOL brick body building program. Experienced builders took me by the studs and helped me be a better builder. Now I lift large cool-lookin' spaceships every day and when those bullies come and see my engines flexing, they run. And all the babes, well, every girl's crazy 'bout a SNOT (Studs Not on Top) buildin' man.

So if you want to get advice from this LEGO Country Boy, then send in your questions, concerns, prayer requests, and mortgage applications, and I'll do my best to give you some of the same great advice that I recieved.

Q: Hi, I'm a paparazzi starting a magazine about the LEGO community. What do you think I should do?

A: Hi... yer a what? Paparazzi? I got me some of them on my pizza pie last night. Man that was good. What you wantin' to be a sausage for anyway?

A LEGO magazine huh? Well, first you git you a buncha people together and say "HEY BOYS! YOU WANNA DO A LEGO MAGAZINE?" If they say "YEAH" then you're doin' fine. If they say "NAW," well then, you're up a space creek without a photon paddle. Next, you'll wanna git you a large Ion Cannon to point at people so they

know you mean business when they miss deadlines. Don't matter if it's plugged in or not... they're volunteers so you ain't really gonna shoot 'em. Just makes 'em shake in their space drawers. Then you log into that there Interweb that people Net on. And post all your stories and hope people read 'em.

Honestly? I think yer nuttier than a Baby Ruth convention.... but you enjoy yerself!!

Q: How do I get a large Ion Cannon? I got a medium one at the Wal-Mart.

A: Look here kid, ya cain't buy a Large Ion Cannon without a 12 Parsec waiting period. And no pepperoni wannabe should be firin' cannons of that magnitude. Next thing you know, you'll be tryin to catch wild Fleebnorks and make em pets.

Q: Hi, I'm new here, so what's a Fleebnork?

A: Them varmints were discovered by one of my commanders, Grand Admiral Sandlin. He has himself a website at http://www.fleebnork.com. You'll wanna check that out 'cuz there's important safety tips there. Like how to best protect the SPAMCAKE drive on your ship and how to properly set yer Frapshovel to whomp them little boogers. Basically they is a bigger pain than a zit on yer fanny... and you don't wanna mess with 'em. A buddy of mine got tangled up with one, he lost a leg, an ear, broke a rib and had his elbows chewed on. His name is Lucky.

Well, that's about all for this issue that I can answer, and I have some JUSTICE to deliver, so 'til next issue, I'm Captain Fazoom signing off!

—Chris Giddens

Chris Giddens has been a fan of LEGO since his first set in 1977. Since then he's been building spaceships, and now as an AFOL he's getting to see many of those childhood spacecraft built the way he's always wanted. Back a few years ago, he struck on the idea of building a spaceships to "bridge the gap" between the futuristic Classic Space theme and the more now-a-day Life on Mars and Space Port themes. This theme dubbed "Pre Classic Space" is now a recognized building style among AFOLs. Other themes have flowed from this style, one being the Star Rangers. The Rangers are futuristic space lawmen who reign in the wilds of space. Their commander, Captain Fazoom is best described as "Larry the Cable Guy meeds Flash Gordon." His wisdom shall be recorded here for the ages.

Chris and his wife Melanie live in Silver Creek, GA. They have a son, a dog, and a lot of LEGO. Chris works as a Children's Minister in a Baptist Church. He is part of the Lego Ambassador program, DixieLUG, Scibrick, and co-founder of Classic-Space Forum. His personal website is http://pre.classic-space.com .

How Fast Can an Imperial Star Destroyer be Built?

by Huw Millington, reprinted with permission of the LEGO Ambassadors Team

As part of the LEGOLAND Windsor's After Dark events, a 10-member team attempts to set new 10030 Imperial Star Destroyer building time world record.

On Saturday April 9th, members of the Brickish Association attempted ¬– for the first time in the UK – to beat the ISD building world record.

Of the ten member team, only two actually owned the set and had built it before. Nevertheless the group from Brickish Association gave it their best shot and finished with a time of 1 hr. 13 min. 56 sec. One factor for not coming closer to the record time might have been the weather as it was a fairly cool day and as team member Huw Millington stated "Our fingers were getting pretty cold."

Despite not breaking the record, great fun was had by all, and they hope to have another crack at it in the future.

The current record still stands – for now

Currently the record build time for the mammoth 3,104 piece set is held by the to member team from the New England LEGO Users Group (NELUG). On October 30th 2004 the 10 member team working with the Solomon Pond Brand Store, challenged the record held by a German team of 1hr 2mins. With the Brand store manager keeping time, the NELUG club shattered the record by clocking an amazing time of 54 min. 21.47 sec.

So, who will hold the record next?

Records however, are made to be broken, and don't expect this one to stand. At the Star Wars Celebration III in Indianapolis, the first-ever head-to-head ISD building challenge took place, and teams tried to take down this record at the LEGOLAND California Star Wars celebration, so the the time is sure to fall. *Editor's Note: The fastest time at Celebration III was 1 hour, 22 minutes.*

Huw Millington, 41, lives in West Sussex, UK and has been an AFOL for about 10 years having been bought out my dark ages following the birth of my first daughter (now 12) and digging out mychildhood collection from the attic. He's a founder member of the Brickish Association, and also its vice-chairman. Online, he is the creator and webmaster of Brickset.com and X-PodWorld.com as well as for the Brickish Association's site.

ISD Photos by Ian Greig

News:
House of Bricks

Chicago, IL
May 6-8, 2005

A New Direction and New Success!

by Felix Greco

Felix Greco is a neurobiology graduate student from Bloomington, Illinois. His building interests include space, castle, and sculpture. Felix believes that building with LEGO is not only a fun hobby, but can also be an artistic means of self-expression. This can be as subtle as including one's sense of humor into a creation or as complex as reflecting personal feelings. Felix's gallery of creations can be found at http://www.lugnet.com/~94.

In addition to being an avid builder, Felix actively supports organized fan events. This has included being a founding member of Chicago Lego Builders, an adult fan group, and SciBrick, a club dedicated to the public display of Sci-Fi LEGO creations. He has also helped coordinate the adult LEGO fan conventions 'BrickFest' and 'House of Bricks'. Felix's most recent project supports his local children's museum where he will be creating an interactive display and showcase for his creations.

Chicago House of Bricks was an AFOL event held May 6-8, 2005. The following is a report by the event coordinator, Felix Greco:

House of Bricks was an attempt to combine AFOL enthusiasm for LEGO with a science-fiction/fantasy convention. I was approached in the summer of 2004 to do this event, and I didn't know what to make of it. My initial impression of science-fiction fans was probably much like others. I believed them to be gangly awkward social recluses whose idea of a good time was arguing how many Star Trek episodes exist. This was unfair of me and quite hypocritical; being an Adult Fan of LEGO probably does not score someone points on the 'cool-person' scale. Knowing that AFOLs are fun and talented people beyond what most would initially think, I decided to be open to the idea.

2BeCONtinued is an event put on by the Midwest Science Fiction and Fantasy Association (MSFFA). This organization is well known in the sci-fi and fantasy convention circuit for putting on really great evening parties. A few of their members came to a CLB (Chicago LEGO Builders) meeting and personally invited us to be a part of their convention. Their representative, Jon Gilchrist, has been an AFOL for a number of years and had always felt there was a place for LEGO fans within a sci-fi/fantasy convention. He and his associates asked us only one question, "What can we do to help you have fun?" This warm introduction set the tone for what became a very fun relationship.

Though the number of AFOLs in attendance was small, the names were very big. This resulted in a quite impressive display that represented all the major LEGO themes. One might assume that being a science-fiction and fantasy event, only space and castle themed creations would be appropriate. The tone of the whole event centered on playfulness and imagination. Thus, displays such as the great ball contraption and the train layout were among the crowd favorites. The beauty of House of Bricks, however, was that it offered more than just the LEGO component. There were celebrities, shows, films, and a number of other fun things to do. At night, the parties were outrageous and fun—a testament of the camaraderie felt by everyone in attendance.

House of Bricks was a step in a new direction that was a huge success. On a number of occasions, I have seen the positive reaction of the public to our displays and works. As a result, I've often wondered why we don't venture into new areas. Displaying our creations online and at conventions that only feature other LEGO fans will take the community only so far. How many potential fans are unaware of this outstanding community? How many opportunities have been missed because most are unaware of the outstanding things we can accomplish? I have marveled too many times at the breath-taking achievements of my fellow builders to idly stand by as their accomplishments go unnoticed by the general public. There has been no greater time to take the spotlight and show the world just what we can do. Seeking out new venues and new methods of displaying our work will help our community grow and open a very exciting world of opportunities for all of us to showcase our talent and have fun.

Photos by Joe Meno, except where noted.

Group photo by Michael Eclarinal

People: Interview

Global Community Director, The LEGO® Group

BrickJournal recently had the opportunity to chat with Jake McKee, who is a major force within the LEGO community. We are pleased to be able to bring you this exclusive interview.

BrickJournal: Hi Jake. Thanks for allowing us to interview you. I'd love for the readers to get to know you, both professionally and as an AFOL . So let's start out with: Who is Jacob McKee, LEGO Group employee?

Jake McKee: I am the Global Community Development Director – or Community Liaison to my friends. I work to provide a bridge between the LEGO Group and the fan community. My goal is to break down that wall that has existed for so long (and in so many businesses) between a company and its consumers. I'm also here to bring the voice of the company to the community and vice versa.

BJ: Who is Jake McKee, AFOL?

JM: As an AFOL, I'm pretty stereotypical. I have a room set aside for my LEGO collection. I went through the dark ages in middle and high school, but kept lightly in touch with the LEGO products in college. In 1999, I discovered the Star Wars LEGO sets, which prompted me to look up LEGO online and found LUGNET. I'm member #211.

BJ: The LEGO Group seems to be one of only a few toy companies that actually has a large presence in the community, allocating resources directly to building relationships and gaining feedback from the customer. What drove the LEGO Group to support this work, and what does senior management think the success of this group has been?

JM: In 1999, Brad Justus was hired by LEGO Group owner and CEO (at the time) Kjeld Kirk Kristiansen to form and run a new business unit – LEGO Direct. The intention was to bring all of our direct-to-consumer activities under one roof, in order to circle the wagons and start to change the way the company worked directly with the consumer… not something we'd been particularly good at for decades past. Direct then owned the Shop At Home business (Web and catalog), the www.LEGO.com site, the Club magazine, the call centers, the adult fan interactions, and other business functions.

After about two years, Brad pulled together a team of 10 people from various parts of the LEGO Direct organization to help define our community strategy for the future. Out of that workgroup came the idea that we needed a specific team to work on nothing but community development and support concepts. In January 2003, the LEGO Community Team was born.

As you say, we are one of the few toy companies (really one of the few companies) who has taken an active role in working with our consumers. As far as we're concerned, this is simply good business – our consumers are our best sales people, why not talk to and work with them?

Until recently we have, like many businesses, kept our consumers at arm's length. That has really started to change, and after several years of persistence on both the Community Team's part and the fan community's part, that mindset has begun to disappear. More and more, we are creating work groups of fans and LEGO employees that are working on future products. We're including more and more local fan groups in the official LEGO events and activities. We've begun to design products for fans (sets like the Imperial Star Destroyer) with more coming regularly.

In 2004, we saw a fundamental shift in the minds of many colleagues at all levels (senior, middle, junior management) of the company about the importance of our fans of all ages.

BJ: I assume this was a lot of the driving force behind the Ambassador's Program and the LEGO Factory competition using LEGO Digital Designer?

JM: It's absolutely part of the base concept of trying to bring your consumers into the company. As we said about LEGO Factory, "[we are] co-creating products side by side with our consumers." With the Ambassador's Program, the motives are a bit different, but still fall under the basic umbrella of breaking down the wall between inside and outside the company. I've always referred to the LEGO Ambassadors as "a trusted group of colleagues who don't happen to work with us."

BJ: Space or Train?

JM: Hard to say. I mean I wrote a book about trains, and I've been a big trainhead for years. But I've been building Moonbase modules lately, since my local club (TexLUG – Dallas –www.texlugdfw.com) is more into space. Of course, I was building a space train as part of that… so I'd have to go with TRAIN!

BJ: "You run the BricksOnTheBrain and Building Instruction (BI) Portal websites. How popular have these sites become, and have they met or exceeded your expectations when you started them?"

JM: It's been a crazy ride for the BricksontheBrain.com site. I started the site back in late 1998, really as a way to learn how to program ColdFusion sites (I was working in Web development at the time). I needed a project to start hacking around on, so I chose an online store that was selling LEGO elements. I never really wanted to sell LEGO elements, but when I got the site about 85% done, I realized that I could actually finish the store and turn it on. This was before bricklink.com, and before really any other sites were using a true shopping cart concept to shop for LEGO elements. I launched the site, got a good amount of business, and lost money on every sale. But it was a terrific time, and gave me some insight into parts of e-commerce that I'd not experienced before that.

In 2000, when I took the position with LEGO, I had to shut down the store… which was fine for me (did I mention I lost money on each sale?). For a while I struggled with what to do with the site. One day I was chatting with another AFOL and we were talking about how hard it was to find AFOL created building instructions for models. As a marginal builder like myself, I always enjoy building models from other AFOLs, and BIs are the easiest way to make that happen. So I started coding and created the Building Instructions Portal site. I haven't really touched the code on the site for a while, but there are new users coming all the time. We have nearly 1000 building instruction links now (we don't host anything, just point to the place on the Web where the BI lives)! I get a few emails a week from users thanking me for the resource or asking for help. It's exciting to see this still be useful to the community and to non-AFOLs of all ages for several years now. I never expected it to be this much of a community resource.

"You work for LEGO?? Cool!" I knew then that I had one of the coolest jobs on the planet.

BJ: What is one of your favorite moments from working inside the company?

JM: Well, I have two: one story about working for the company, and one story about working in the company. The first story was in California. I was out for BricksWest™ and stopped in a smoothie shop. While I was waiting, a mother and her two kids walked past me to leave. The mom noticed the LEGO logo on my jacket and asked me if I worked for the company. I said I did, which she relayed to her 4-5 year old son. He turned around and belted out (little arms flapping): "You work for LEGO?? Cool!" I knew then that I had one of the coolest jobs on the planet.

And it's not so much a story as it is a great memory, but a year or so back, I was able to arrange a meeting with the LEGO Group owner, Kjeld Kirk Kristiansen and three adult LEGO fans. I had such a great time sitting back and letting these brilliant fans show off their hobby and their enthusiasm to the highest member of the LEGO Group there is.

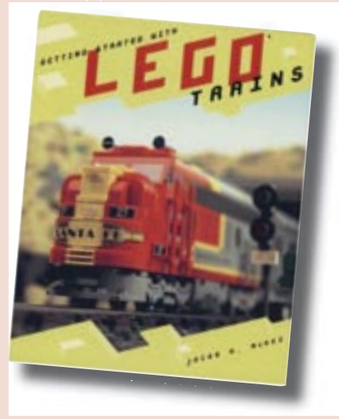
BJ: What is one of your favorite moments as an AFOL?

JM: So many to choose from! I'd have to say holding my book in its final printed form for the first time. This was such an amazing project. I was able to work with a number of the leading LEGO Train AFOLs for many parts of the book and that lead to some great conversations. I also worked via LDraw and email with James Mathis to create the design of the reefer car. It was incredible to be able to share in the design process on an immediate basis with someone who was a thousand miles away. And as weird as I feel about signing my book, I love doing it simply because of the great conversations that get started with other train fans.

BJ: If you were able to give out a single piece of advice to our readers and potential future AFOLs, what would it be?

JM: If there's one thing I find myself telling AFOLs over and over, it's "You're better than you think you are." It's funny how many amazing builders tell me that they don't think they're that good in comparison to other builders. Or AFOLs tell me that because they haven't put on some huge display, they're not confident that they can do something smaller. Fact is, we're all better (and more capable) that we give ourselves credit for.

Jake McKee's Library and Website



Jake has produced one book:

***Getting Started with LEGO Trains* (2004)**

This book is in print and available at bookstores and online.

He also hosts and maintains a website:

Bricks on the Brain
www.bricksonthebrain.com

which is host to:

Building Instructions Portal
http://www.bricksonthebrain.com/instructions/index.cfm

Bricks on the Brain Blog:
http://www.bricksonthebrain.com/blog/index.cfm

Bricks on the Brain *Getting Started with LEGO Trains* Page:
http://www.bricksonthebrain.com/trains/index.cfm

Creator of The Brick Testament

a talk with

The Rev. Brendan Powell Smith

One of the interesting people in the AFOL community is The Rev. Brendan Powell Smith. Thanks to his hugely popular website: www.thebricktestament.com and subsequent books, Smith is perhaps the builder who has become best known outside the AFOL community. His Brick Testament has reached genuine cult status and has been featured in newspapers and magazines across the world.

Smith was gracious enough to talk to *BrickJournal* about what he does with LEGO and why. One thing is clear – "Reverend" Smith is not your average AFOL and his reasons for building are as unique as his project.

Article by Magnus Lauglo
Photos provided by the Rev. Brendan Powell Smith

BrickJournal – So, for the uninitiated, what do you do with LEGO?
Brendan Powell Smith - I illustrate the stories of the Bible using LEGO bricks. Stories are retold with direct quotes from scripture and an accompanying illustration.

BJ: How did you get the idea to do this?
BPS: It was in college that I actually sat down and really read the Bible for the first time. I assumed it would be very dry reading, like an incredibly long theological treatise. In fact, it was lurid and full of surprises. And I thought, "I don't think people are really aware of what's in this book." Even some of the more famous stories seemed quite different in the public consciousness from how they were originally told.

I got the idea to try my hand at rendering some famous scenes from the Bible in LEGO bricks. The original impulse was to make just single scenes, like the Garden of Eden, The Tower of Babel, or The Last Supper. But as I actually started construction on Eden, I began to realize that this could be the opportunity I'd wanted: a way to retell these Bible stories in a way that would be as frank and colorful as the original text.

BJ - This has clearly become quite an undertaking. What motivates you to continue work on such an expansive project?
BPS: My motivation to continue with the project has remained high since I first started. It was amazing to me how popular the site became almost overnight, and I've received hundreds and hundreds of e-mails from people who are enjoying my work. That's pretty much encouragement enough, but also I still unwaveringly feel that it is a worthwhile project, it's always been fun to work on, and there always seem to be more great stories to illustrate just around the corner.

BJ: You describe yourself personally as an atheist. How does this affect working with material like the Bible?
BPS: It means that I don't bring any personal theological convictions to my reading of the Bible, which I think is helpful. All too often illustrators and re-tellers of Bible stories tend to impose their own modern theological concepts of God and morality into these ancient stories, and often it's not a very good fit. There is a great temptation for such people to change the stories around to make them say things they originally didn't—or to accompany seemingly troublesome stories with several paragraphs of "analysis" that attempt to eke out some moral to the story that is theologically acceptable to modern believers. I try to let the Bible speak for itself.

When I'm illustrating these stories, I'm actually able to suspend my disbelief in God and I treat the Bible as unerringly true. I then do my best to portray God exactly as he is portrayed in the Bible.

BJ: How has working on *The Brick Testament* affected your own understanding and/or appreciation of the Bible?
BPS: I'm not sure it has. The process has certainly necessitated my becoming more familiar with the stories of the Bible than I was before, but I can't say I've come to any sorts of revelations through the process of LEGO illustration. But it's definitely made me appreciate and understand LEGO more thoroughly.

BJ: Do you have any advice to someone who was inspired to use LEGO to illustrate other great and epic works of literature?
BPS: First is the idea that the story is taking place in a completely LEGO universe. I try very hard to maintain that illusion by never showing the edges where the LEGO universe ends and the non-LEGO universe begins. Baseplates and LEGO scenery must extend to the horizons, and not run out at the sides of the photos. The only non-LEGO element allowed in my photos is the background sky (which is just a piece of posterboard with cloudy sky printed on it, but it really helps maintain the illusion).

> *"I don't think people are really aware of what's in this book. Even some of the more famous stories seemed quite different in the public consciousness from how they were originally told."*

The second thing is the use of cinematic camera angles, sharply focused close-ups, short depths of field, adequate lighting, and well-composed shots. I sometimes think these are equally as important as the quality of the LEGO creations being photographed. Perhaps most important of these is the use of the minifig's perspective camera angle. To see things from a minifig's perspective can really draw the viewer into the story.

BJ: You get lots of fan mail I understand.
BPS: I would estimate I've received close to 2,000 Brick Testament related e-mails since the site first went up. While there has been a very occasional negative response to the site, the overwhelming majority of people just write to say that they think the site is cool.

BJ: What has been the most rewarding aspect of the project for you so far?
BPS: There's a sense of accomplishment each time I finish a new set of stories and add them to the website. I know that I'm adding to a body of work that I can be proud of, and one that will hopefully be enjoyed by a great many people for a long time to come.
There are many other very nice moments too, like seeing my book on display at a bookstore, or just figuring out a cool new building technique in LEGO.

BJ: You've published three books so far, do you have plans for more?
BPS: I'd love to continue the series. I am not sure at this point what the next book might be. I am guessing my publisher will be pushing *The Story of Christmas* book as a perennial seasonal item, so after *The Ten Commandments* that is just coming out now, the earliest we'd see another new book would likely be spring of 2006.

BJ: Is there anything else you'd like to add?
BPS: I don't know if the Brick Testament would have ever been made without the support and encouragement from my fellow LEGO builders on LUGNET. And though I may currently have the LEGO project that has become the most popular outside of our AFOL community, I do not consider myself the most talented LEGO builder out there, so I am continually appreciative of the great exchange of ideas that takes place on sites like LUGNET and Brickshelf. It's been really wonderful to have a community of adult fans of LEGO to share my creations with and to be continually inspired by.

The Reverend's Library

Brendan Powell Smith's books include:

The Brick Testament **(2003)**

The Story of Christmas **(2004)**

and

The Ten Commandments **(2005)**

All are in print and available at bookstores and online.

Kieth Johnson: Houston, We Have a Builder!

Kieth Johnson at his desk in Johnson Space Center. Photo courtesy of NASA.

While the LEGO® building community has the commonality of a hobby, there are many diverse people who build. Some of these people are well-known or experts in their own fields.

One of these people is Kieth Johnson, who works for the Space Shuttle Program in Houston. Training and directing astronauts, he still finds time to build with his sons. He was happy to chat with *BrickJournal* about his job and his hobby.

BrickJournal: What is your job description?

Kieth Johnson: I am an ExtraVehicular Activities (EVA - or space walk) Flight Controller/Instructor in the Mission Control Center (MCC) at Johnson Space Center (JSC). I prepare astronauts for EVAs by developing timelines and procedures, training them on spacecraft hardware (both Space Shuttle and International Space Station) operation, figuring out how that hardware can fail, and practicing all of that in the Neutral Buoyancy Laboratory (NBL), or big swimming pool. During both Shuttle and Station EVAs, I am an EVA officer in MCC. I monitor the progress of the EVA and provide feedback to the rest of the flight control team to make sure everything goes smoothly.

I'm also working with the team developing potential techniques to repair the Thermal Protective System of the shuttle. This includes figuring out how to install special repair materials that will allow a shuttle to come home if damage occurs on the wing leading edge or on the tiles.

BJ: How long have you worked with NASA? And is the excitement building for the return to space?
KJ: I've worked at JSC since 1989. I came here right after graduating from Iowa State University.

I started working in the space program shortly after the return to flight following the Challenger accident so things were already back on the up-swing at that point. This has been a very long period since the Columbia accident and everyone is very anxious to get back to flying. We're making sure we've done everything possible to have the safest flight we can so we keep telling people that we won't launch until we're ready.

BJ: When did you start LEGO building? Was there a time when you stopped building?

KJ: My mom got me my first LEGO set when I was about 7 years old by sending in a label from a Velveeta box. I was hooked from the start and asked for new sets up until I was in high school. At some point it just didn't seem "cool" so I snuck my box of LEGO bricks out when no one was around—even through college. My mom wouldn't let me take them with me when I moved to Houston (I had to compete with a younger brother and the potential

One of the many spaceships that Kieth has built. Photo courtesy of Kieth Johnson.

of grandchildren). I would have to say I entered my "dark period" for several years until I decided to start collecting them for my first son.

BJ: What do you like to build?

KJ: I tend to build spacecraft. That doesn't mean I don't build anything else! I've built train layouts around small towns, castles (good guys versus bad guys for my kids!), cars, and small scale mecha. One of my favorite things to do is watch a sci-fi movie then try to build the spacecraft in it.

BJ: Have you built LEGO models for reference for your work?

KJ: I have given some thought to crossing the work/fun gap but just haven't applied LEGO building that way.

BJ: What's your favorite LEGO set?

KJ: I know I'm likely biased by my job, but I think LEGO set # 8480, "FOS Light" Space Shuttle, is a really great set. It was challenging to build but is one of the best ways to show other people what you can do with LEGO. Many of my coworkers were really impressed when I brought it in to work and showed them all the moving parts. It's one of the only sets I still keep together (although I took the tiny red motor out of the deployable satellite).

BJ: There must be a lot of pretty technology-minded people at NASA—what do they make of your hobby in general?

KJ: Several of my coworkers show a lot of interest in MOCs that I bring in to set on my desk. I like showing off the details and discussing the designs. Some people still consider it acting like a kid though. I know I'm a kid at heart. Unfortunately, some people take my MOCs too literally and try to explain the technical inconsistencies. Maybe they aren't letting their imaginations roam.

BJ: What's your favorite original creation?

KJ: It's hard to say I have a favorite creation of my own. I feel some accomplishment when I finish what I set out to do but then I never have any qualms about taking the thing apart afterwards. Thanks to digital cameras, I can at least keep some record of stuff I've built recently. I can tell that I've made something pretty good when my youngest son gives it the "swooshability" test, makes very few modifications of his own, and then doesn't give it back. Again, I don't put too much "love" into them because they often are destroyed in his "epic" battles.

I used to think that the LEGO® Company was making too many "specialized" parts and straying away from the basics. But sitting next to my kids, watching them take these "specialized" parts and use them in completely unconventional ways shows that there is no limit to the imagination. LEGO bricks are still one of the best ways to express that.

Although the Shuttle is over 25 years old, it's still a pretty cool vehicle. I don't mind collecting micro-scale shuttles all the way up to technic scale. Having climbed around on the real thing only helps encourage that.

BJ: As an AFOL with young children who also build with LEGO bricks, what thoughts do you have on the way the product has changed with the times? Is TLC "juniorizing" because kids these days are less interested in building?

KJ: I used to think that the LEGO Company was making too many "specialized" parts and straying away from the basics. But sitting next to my kids, watching them take these "specialized" parts and use them in completely unconventional ways shows that there is no limit to the imagination. LEGO bricks are still one of the best ways to express that.

BJ: Were you one of the people who worked on the Discovery mission STS-31 ?

KJ: Actually, I had only been working at JSC for about a year when they flew STS-31. I was working on my first job, which was developing a deployable remote control vehicle called the Orbital Maneuvering Vehicle (OMV), whose mission was planned to be grappling Hubble Space Telescope (HST) and bringing it down to the Shuttle. That project got cancelled by NASA shortly after that and I started in EVA.

I did have the privilege of working on all of the HST servicing missions which really made buying LEGO set # 7470 exciting. The problem is that having worked so closely with very hi-fidelity HST mock-ups for so many years, I picked the LEGO HST model apart (no pun intended).

On the first HST servicing mission, STS-61, I was the EVA space suit lead but got to learn all about how HST works. I was the EVA task lead for the second HST servicing mission, STS-82, where I worked very closely with the astronauts on the specific repair objectives that they needed to do. On both of those flights during the mission, I was in what we call the "back room" or Multi Purpose Support Room (MPSR) where I supported the EVA Officer in the Flight Control Room (FCR) or "front room." I learned quite a lot from both of those flights and was made the EVA lead for the third HST servicing mission, STS-103. My "back room" support for that mission became the EVA lead for the fourth HST servicing mission but I got to be one of the EVA FCR planning shifts.

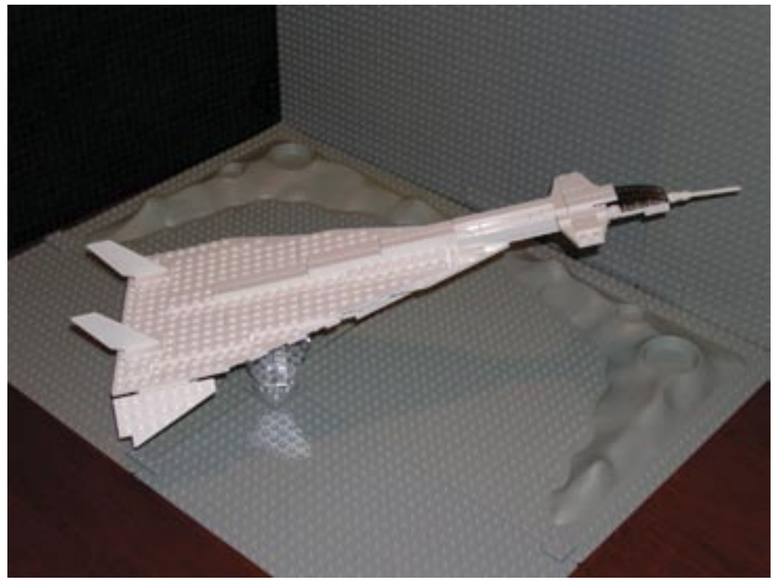
BJ: What are your thoughts about the Discovery sets?

KJ: Although there are a few gross errors in the design of a couple of the sets, I think they are great to help raise awareness of NASA missions. I had the Mars Exploration Rover at my desk when Spirit and Opportunity first started sending images.

BJ: What were the errors?

KJ: To start with, the International Space Station has many design flaws. The Orbiter docks to Station on its underside (pretty easy to modify and correct), the S-band antenna is way too big, and solar arrays don't spin on horizontal axis – just to name a few. As I mentioned in an earlier question, the HST model in the Shuttle Discovery set is way off. The scientific instrument (aft shroud) section and forward shell/mirror section aren't scaled right. The LEGO HST model has solar arrays closer to the new ones installed on a much later flight.

XB-70 Valkyrie test plane model. Photo courtesy of Kieth Johnson.



BJ: Are there any NASA designs that you'd particularly like to see LEGO make Discovery sets of?

KJ: In my opinion, the LEGO Company has done pretty well with the NASA Discovery sets so far and there are a few other vehicles that might be interesting. But to be honest, finding AFOL models of NASA craft on the web is much more impressive.

BJ: What about the various minifig scale and technic NASA themed sets? LEGO released a slew of shuttle sets over the years. They are obviously less complex sets but do you get much of a kick out of them these days?

Kieth's Red Rocket stands with the Mars Exploration Rover and an assortment of awards. Photo courtesy of Kieth Johnson.

KJ: Although the Shuttle is over 25 years old, it's still a pretty cool vehicle. I don't mind collecting micro-scale shuttles all the way up to technic scale. Having climbed around on the real thing only helps encourage that.

BJ: Are you a fan of Star Wars and what do you think of those sets?

KJ: I am a fan of Star Wars but am disappointed that LEGO can't make other space-themed sets while they market Star Wars. I have to say that there are better spaceship model builders in the AFOL community than Star Wars model builders.

BJ: And how about Life on Mars?

KJ: I think the Life on Mars sets are a fun way to dream about life on other planets. They should have cooler spaceships though!

BJ: Why do you build?

KJ: I love the freedom to express ideas I have floating around in my head. I think LEGO bricks are the reason I went into engineering. Building is such a great way to combine function and form.

BJ: So if you hadn't built LEGO bricks as a kid you probably wouldn't have this awesome job now?

KJ: It's hard to say what came first, my engineering-based mind using LEGO to help expand or the other way around.

I also get a great deal of satisfaction out of building side by side with my kids. It's just the best when we come up with a big project, discuss ideas, and then work together on building it.

BJ: Most of us builders are solitary, so I'm curious about building with a group. How do you come up with a big project? Do the kids decide what part of the model they do, or do they improvise? And how do they discuss ideas ?

KJ: My sons' and my ideas for building a big project come from just about anyplace. We'll be driving in the car, see something interesting, and one of us will suggest building it. Each of us throws out ideas about what would be cool to try to build and we'll head home and get started. Oftentimes, the discussions of who's building what are the best part (not that building with LEGO isn't an awful close second!).

BJ: What is your dream LEGO noun? project?

KJ: I've got my mind set on building a life-size model of Earth - just kidding. I've got lots of ideas, I only wish I had more time (and bricks) to build them all.

BJ: You recently got engaged through a unique way. What's the story?

KJ: It's taken a while for my girlfriend to accept my LEGO hobby. She'll occasionally sit down and watch what I'm building, make something small of her own, or just ask questions. She wanted to know why I generally built spacecraft and didn't make flowers or other more organic creations. She said I should spend more time building those types of things.

When it came time to ask her to marry me, I decided to build flowers rather than buy the traditional dozen roses. Being a chronic procrastinator, I didn't leave myself a lot of time to come up with my own design for flowers so I looked on the web and found some truly wonderful MOCs by other AFOLs. I used designs by "Spacemanmort" and "Lorax" with minor modifications of my own to make an assortment of various flowers.

The evening I chose to "pop the question" (it happened to be Valentine's Day – a bit of a cliché) I prepared a very special dinner, set candles out throughout the dining room, and placed the LEGO flowers on the table. She was impressed by everything but most especially the flowers. Apparently, she didn't think it could be done (she needs to look online more!) After dinner and a special bottle of one of her favorite wines, I asked her to marry me and she said yes.

I guess I didn't factor in how much she loved the flowers nor how sentimental they had become to her. She asked if she could make them sturdier by gluing them together and keep them at her desk at work. At first, I was totally shocked. I said "you can't glue LEGO!" That might not have been the best response so I agreed to let her keep them as long as she agreed that I could replace the pieces that were used. I'm pretty sure I lucked out all the way around!

We plan to marry some time next February or March and she has even suggested a LEGO Brick-shaped groomsman's cake. That sure beats a shuttle-shaped cake!

Rose photo by David McCracken

Samsonite and the LEGO® Company: First Steps Into the North American Market

by Gerhard Istok
Photos by Eric Strand except where noted

A page from the 1972-73 JCPenney catalog for sets. Scan from David Shifflett.

The first LEGO sets saw the light of day back in 1949, when the LEGO Group (TLG) first started producing the Automatic Binding Bricks for the Danish market. In 1953, they changed the name of the product to "LEGO." 1953 was also the year for the first foreign LEGO sales, namely Norway. This was followed in 1955 by Sweden and Germany, and in 1957 by Switzerland, Austria, Netherlands and Portugal. By 1960, LEGO was sold in much of continental Western Europe, including Britain.

The first overseas markets for LEGO were USA and Canada. Due to a chance encounter in Europe between TLG chairman GKC and one of the Shwayder brothers (founders of Samsonite Corp.), LEGO sales started in the USA in 1961 and Canada in 1962. Unlike LEGO sales in Europe, Australia and elsewhere, the sales of LEGO in the USA and Canada were licensed out to the Shwayder Bros., which officially became known as the Samsonite Corp. in 1965.

Although the first sets were sold in the USA in 1961 and Canada in 1962, the first LEGO parts for the USA market were produced at a Samsonite plant in Stratford, Ontario, Canada. There were also specialty parts, such as cars, trucks, road signs, gas station accessories and trees/bushes that were still produced in Denmark. The first USA produced LEGO parts came in April 1965, when a new 50,000 sq. ft. plant opened in Loveland, Colorado.

Most LEGO sets licensed under Samsonite were different than those produced by the LEGO Company for the rest of the world. Although the sets produced from 1961-65 mirrored the Town Plan line produced for Europe and the rest of the world, from 1966-72 it looked like USA and Canada had greater autonomy in their set and part designs.

In many ways Samsonite was a trendsetter for LEGO parts. The first Samsonite LEGO motors and gears came out in the fall of 1965. This was earlier than that produced by TLG in Europe and elsewhere. The first LEGO motor produced by TLG in Europe came out in the spring of 1966, and the first European gears came out in the fall of 1969. In the fall of 1969, Samsonite also produced the first LEGO road plate ever, the #078 50x50 stud base plate in green and gray.

Although there were many Samsonite innovations, relations between Samsonite and TLG appeared to get increasingly strained, especially in the USA. By circa 1970, relations had gotten worse, and it became apparent that TLG wanted their LEGO license back. It appears that there may have been litigation, and by 1972, Samsonite ceased production at the Loveland plant. TLG had gotten their license back in the USA, and was setting up shop in Connecticut to produce their own LEGO sets for the USA market.

For whatever reason, Samsonite of Canada continued to toe the TLG line, and Samsonite licensed sales in Canada continued until 1986, when it too reverted to TLG. From 1972 (when USA Samsonite lost the license) until 1986, Samsonite of Canada was selling the same sets as TLG sold in Europe and elsewhere. No longer were there any "Samsonite" versions of LEGO sets like there were in USA and Canada from 1961-72.

Before Samsonite USA gave up their license, they produced some very large sets (700-1252 pieces), and dumped them on the USA market in both store shelf sets, and catalog sales. Some USA department store catalogs sold Samsonite LEGO sets as late as August of 1973 (even though the license was suspended the previous year). The still relatively new Loveland, Colorado Samsonite LEGO plant must have churned out as much LEGO parts as they could in 1972 (before the license was revoked), using up much of their stock of ABS plastic. By 1973, unique Samsonite LEGO sets, as a different and interesting variation on early LEGO, were a thing of the past.

Box art for the Motor Pak, one of many Samsonite LEGO sets. Photo by Jan Katanek.

1962-63 Samsonite USA Instructions

1962 advertisement for the Saturday Evening Post

Gerhard Roland Istok was born in Coburg, Germany in 1953. His family moved to the United States in 1958, and he received his first LEGO set from his uncle in Germany in 1960, a year before LEGO sets began selling in the US. He currently has 3300 sets in his collection and over 750,000 parts. While Gary experienced a Dark Age from 1968-79, he returned to the hobby and is the only USA AFOL mentioned in THE WORLD OF LEGO TOYS (page 30). He's also been on TV in Canada and Germany (1987 & 1988) and in several newspaper articles representing the Adult LEGO Fan.

He currently lives in a suburb of Detroit, Michigan and is writing a book on CD on the history of LEGO sets and parts.

Involving the Neighbourhood

by Janey "Red Brick" Cook

Often when I build, my two sons, ages 11 and 14, will come over and check out what I am working on. They will offer input or design critiques and sometimes give me fresh perspective or brilliant suggestions, which usually helps me create better designs as well as facilitating their involvement with my hobby of building. I have always enjoyed this part of my hobby, and it's gratifying when their friends drop over and I overhear my children showing off one of my latest creations. I often hear really honest and sometimes even flattering comments from their friends. Of course, sometimes these friends are shocked that I am still building and buying, and on a good day I sometimes receive really thoughtful compliments on what I have made, and many great suggestions on what I should build next.

Last summer, I was working on a fairly complex diorama of buildings, roads and scenery in micro-scale, when one of my eldest son's friends took quite an interest in what was being built. Both he and my son ended up hanging around with me for a few hours while I worked on this project, when typically they would go off to play video games, chat about girls, or listen to the sort of music that usually I try to block out. I thought that their choice to hang with me was quite interesting considering their age, but was glad for the time with them, as they have great ideas and even better, a sense of humour, which I can appreciate.

I had explained to them both that this diorama was going to be travelling with me to Washington, DC to be part of the micro-display for a LEGO festival called BrickFest. A few days later this same friend dropped by again and in his hand were a few micro-cars to add to my scene. I thanked him, and noticed that they were quite good quality, and told him I would be more than happy to add them to my MOC (My Own Creation). At that time this friend mentioned that he would like to learn more about how to build in micro-scale.

After thinking about it for a few days and asking my sons if they would be interested, I chose to throw a little micro-building party. Each of my children invited over three friends so in total we had six guests between the ages of 10-14 plus my own two children and myself for a total of nine. After nibbling on some chips and draining away too much soda we got down to work.

I gathered them around and I talked to them briefly about what we were going to build. I mentioned things about some simple SNOT (studs not on top) techniques, which of course always gets a huge laugh with kids. We talked a bit about scale and ended the short lesson by showing them some pictures of some of my favourite micro models by other AFOLs that were posted on the net as well as some of the things I have created. I was really surprised how excited the kids were to get started, and how many great ideas they had. Once they had decided what they were going to build I let them go wild with my collection.

The thought of letting anyone go wild with a collection that you have spent hours, days, weeks... sorting into little drawers and bins is a bit daunting but it was totally worth it in my opinion. The creativity they showed was incredible, and I was surprised how little guidance they really needed. Once I set the standard for them, they rose above it. It was a great day for all nine of us.

It amazed me, considering the general misconception that children today have limited concentration skills, on just how these kids can focus so effortlessly on a project they are enjoying. It also impressed me on how willing they are to please. I never heard once, anything negative said to each other the whole day. That in itself is pretty amazing considering the spread of age group and the fact that a few of them were siblings. The kids not only emotionally supported each others, and their creations, but also offered ideas to each other.

My favourite quote of the day, "Wow, you really microed that one!" which loosely translates into, wow, did you ever do a great job on making that micro creation really look like the real thing! Now they are asking "When can we do it again?"

Aside from a bit of extra sorting I had to do at the end of the day, I ended up having a wonderful time, as it was really amusing. Considering we had that many kids over, it was surprisingly quiet during the building stage and the results were outstanding. By the end of the afternoon, I had a handful, both literally and figuratively, of new micro MOCs for the micro display at BrickFest and the kids went home with a small set as a party favour, a bit more knowledge in building and hopefully, if I am very lucky, maybe a few AFOLs in the making.

I was so pleased when I got the chance to display their models with lots of the other models created by adults at BrickFest. When other AFOLs were commenting about how much they liked some of the designs the kids made, my pride soared. There are few hobbies that both parents and children can both enjoy together, I am very glad that LEGO is one I can share with mine, and their friends.

Now if I could only convince all their friends that sorting bricks are as fun as building with them.

Janey "Red Brick" Cook is a Ontario born artist by chance, parent of two amazing sons by design and nonsensical by choice.

Mailing Bricks?

by Ashley Glennon

In 1989, the year the original LEGO pirate theme was introduced, the printing presses at the LEGO Company weren't the only ones rolling out pictures of famous Danish bricks.

Denmark is a member of PostEurop, an association of European postal administrators, and in 1989, 35 countries agreed to release postage stamps commemorating children's games and toys; Denmark released a stamp commemorating the LEGO brick.

Priced at 3.20KR (about 55¢ US), the Danish "Europa" stamp depicted two, 2x4 red bricks falling against a white background.

According to the PostEurop website, "Europa stamps are special stamps issued by European postal administrations/enterprises under the aegis of PostEurop and which have Europe as their central theme. Europa stamps should underline cooperation in the domain of posts, particularly as regards the promotion of philately and contribute to making the public aware of common roots, culture and history of Europe and common goals."

For LEGO fans interested in obtaining this stamp, the stamp is known in the stamp collecting world by its Scott catalog number: 871. A recent Internet search yielded prices ranging from 20c to around $2. The LEGO stamp was released alongside another Danish Europa stamp that depicts tin soldiers. These two stamps are frequently sold as a pair (871-872).

To learn more about Europa stamps, visit Jurgen Haepers website at: http://www.geocities.com/euroswiss74/Europa-Stamps.html. Jurgen's website helped contribute to this story.

Ashley Glennon lives with his wife and two children near Seattle, WA, and is one of the pioneers of micro-scale building. Ashley enjoys building in every scale and every theme but may be best known for his LEGO themed website that debuted in 1999, "The Minifig Museum of Modern Art." Ashley is on the editorial staff of BrickJournal.

2002: A Building Odyssey

by Jason Allemann

In a *BrickJournal* exclusive, builder Jason Allemann talks about creating two incredible models: the Discovery and the Leonov.

I still remember how much I enjoyed playing with LEGO as a child. It was by far the best toy I ever had. With one of my brothers being 10 years my junior, I even had reason to continue buying sets into adulthood, for him of course! I got just as much enjoyment out of playing with those sets as he did though. I even managed to buy a few sets for myself, though they were simply built and put on display.

Then LEGO released their Star Wars line, and the combination was too much to resist. By the middle of the year 2000, owning most of the Star Wars sets, my friend Deane and I talked about actually doing something with all the LEGO I had. We thought it would be really cool to try stop motion animation, and proceeded to create a few short films.

One of the classic animations at the time was One: A Space Odyssey, by Spite Your Face Productions. It was a one-minute film about the movie 2001: A Space Odyssey. They didn't have the resources to build a LEGO version of the Discovery, so settled on using a painting instead. From the moment I saw their film I thought it would be awesome to build a scale model of the Discovery out of LEGO. It was, after all, one of my all-time favourite science fiction ships.

My LEGO collection was still relatively small, and I was unfamiliar with the entire online LEGO community and all the resources that were available. I wasn't even sure I actually 'could' build it. The idea was tucked away as one of those long-term goals that seem almost impossible to achieve.

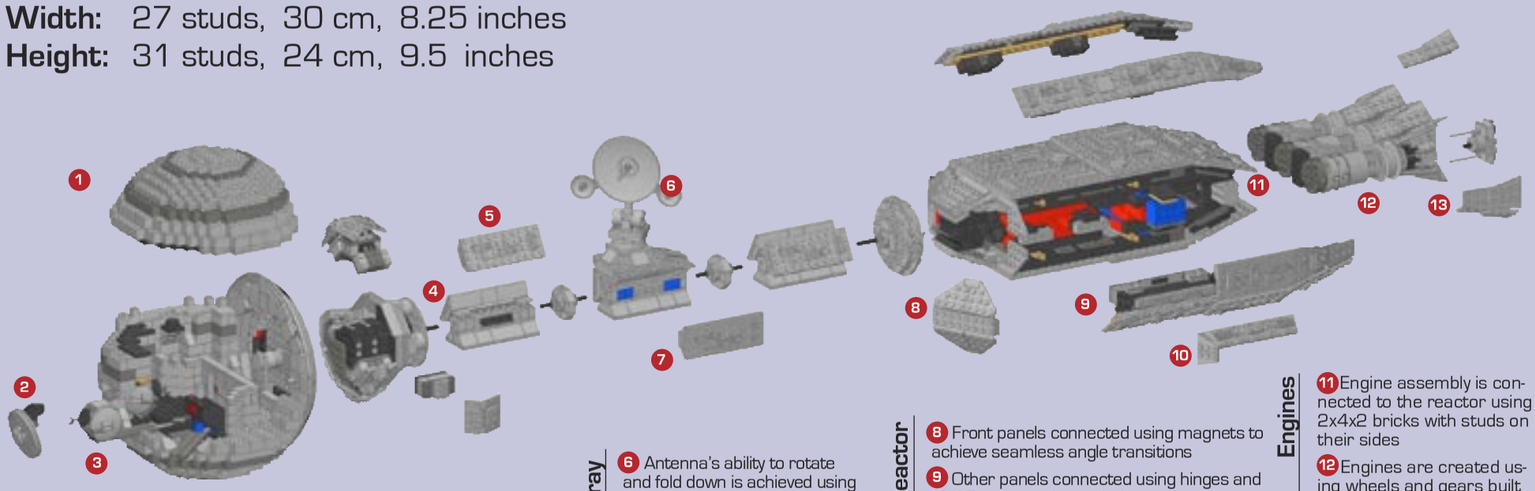
Almost 2 years later, towards the end of 2002, I had built a few smaller scale models, discovered more of the online community and seen what other amazing things people had built. I also found Bricklink, an online marketplace for buying LEGO pieces, which meant I was no longer limited by my own collection. The idea of building the *Discovery* no longer seemed impossible.

I was ready to start.

(continued on page 34)

Discovery

Pieces: 3296
Length: 233 studs, 185 cm, 72.75 inches
Width: 27 studs, 30 cm, 8.25 inches
Height: 31 studs, 24 cm, 9.5 inches



Command Module

1. Top of the command module is removable, exposing detailed interior pod bay and habitat centrifuge
2. Pod bay doors connected using magnets for easy removal
3. Retractable pob platforms slide on tiles and are guided using Technic axles

Spine

4. Neck is created using SNOT (Studs Not on Top) construction techniques and hinges
5. Angled fuel tanks connected to spine sections using hinges

Antenna Array

6. Antenna's ability to rotate and fold down is achieved using a turntable and hinge plate
7. Fuel tank is attached using a 1x 4 brick with studs on one side

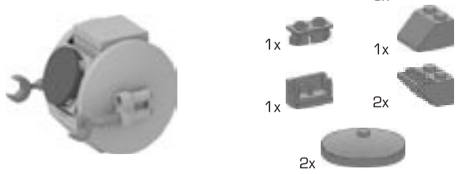
Reactor

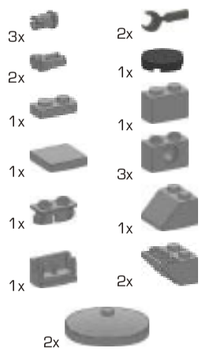
8. Front panels connected using magnets to achieve seamless angle transitions
9. Other panels connected using hinges and SNOT construction techniques
10. Small pieces used to add detail to the hull add texture and mimic the surface details of the ship

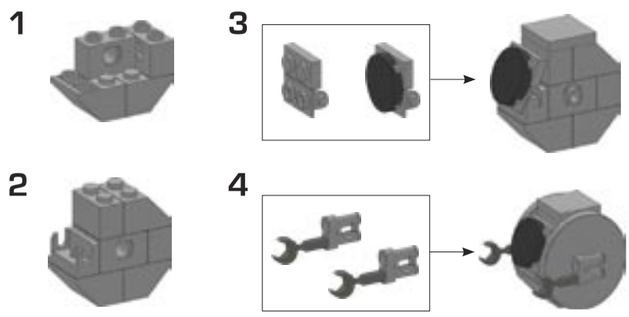
Engines

11. Engine assembly is connected to the reactor using 2x4x2 bricks with studs on their sides
12. Engines are created using wheels and gears built along a Technic axle
13. Hexagonal exhaust shape is achieved using click hinges inserted into Technic wedge belt wheels.

Make Your Own Discovery EVA Pod







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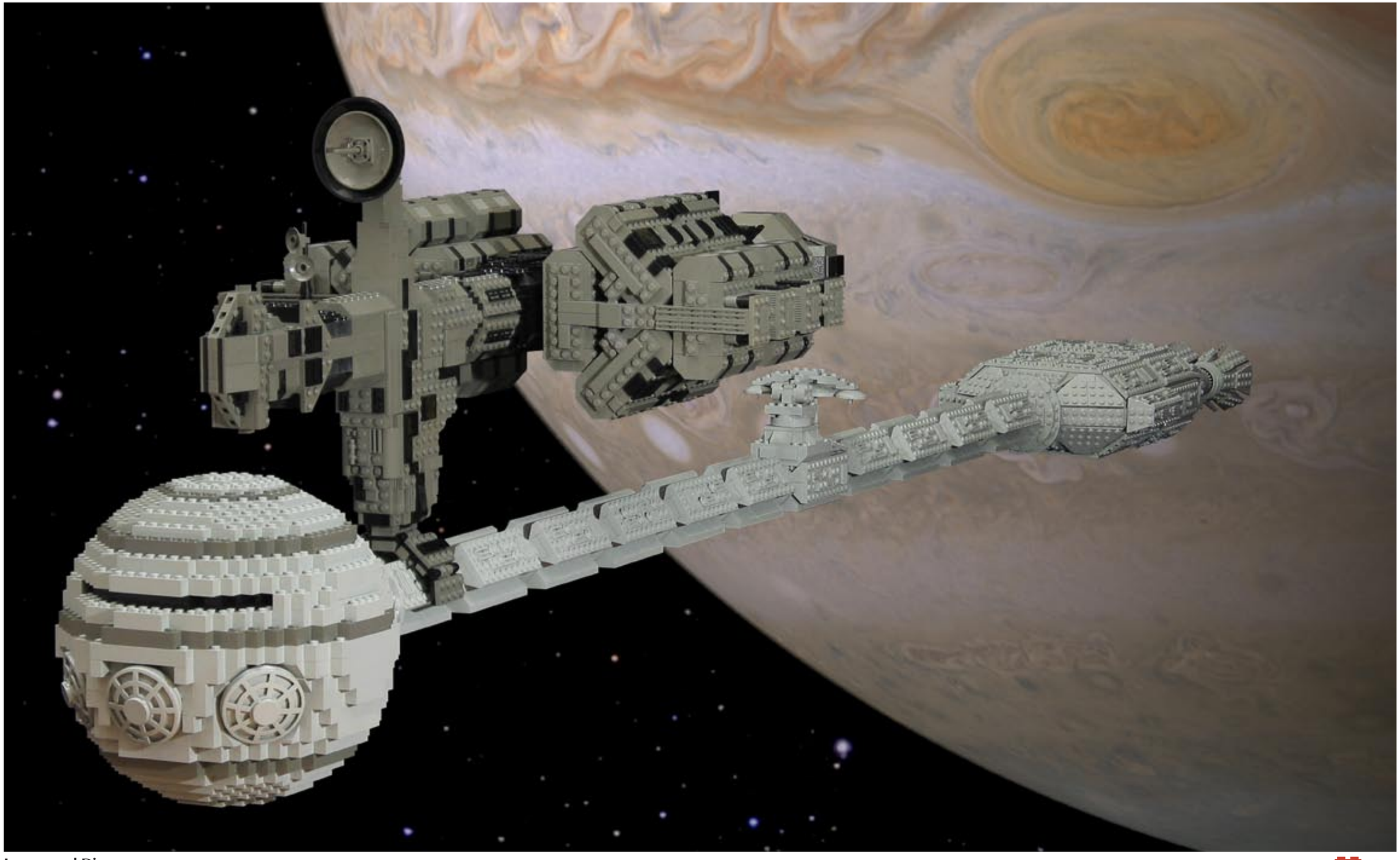
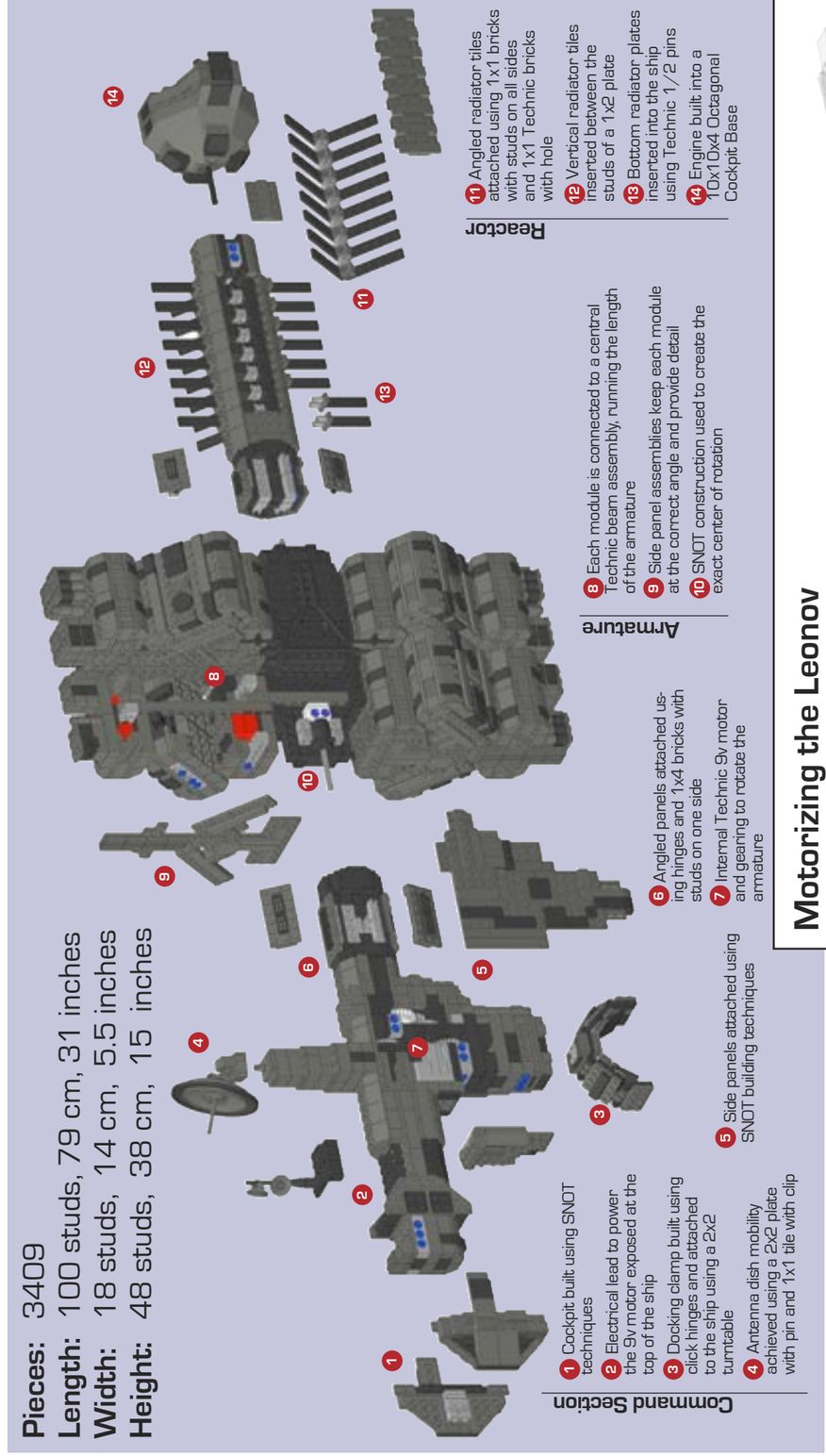


Leonov and Discovery

Leonov

Pieces: 3409
Length: 100 studs, 79 cm, 31 inches
Width: 18 studs, 14 cm, 5.5 inches
Height: 48 studs, 38 cm, 15 inches



Command Section

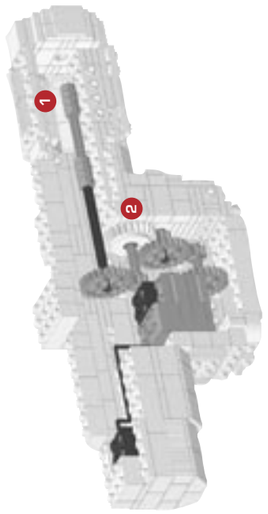
1. Cockpit built using SNOT techniques
2. Electrical lead to power the 9v motor exposed at the top of the ship
3. Docking clamp built using click hinges and attached to the ship using a 2x2 turntable
4. Antenna dish mobility achieved using a 2x2 plate with pin and 1x1 tile with clip
5. Side panels attached using SNOT building techniques
6. Angled panels attached using hinges and 1x4 bricks with studs on one side
7. Internal Technic 9v motor and gearing to rotate the armature

Armature

8. Each module is connected to a central Technic beam assembly, running the length of the armature
9. Side panel assemblies keep each module at the correct angle and provide detail
10. SNOT construction used to create the exact center of rotation

Reactor

11. Angled radiator tiles attached using 1x1 bricks with studs on all sides and 1x1 Technic bricks with hole
12. Vertical radiator tiles inserted between the studs of a 1x2 plate
13. Bottom radiator plates inserted into the ship using Technic 1/2 pins
14. Engine built into a 10x10x4 Octagonal Cockpit Base



Motorizing the Leonov

If the armature is assembled using an 8 stud long axle, the axle will mesh with the axle joiner (1) of the drive shaft and engage the drive system. Using a 7 stud long axle won't engage the system, allowing the armature to freely rotate.

The drive system includes a 24 tooth Technic clutch gear (2) to prevent binding if the armature is externally handled while the system is engaged.

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The Discovery: Odyssey One

I had a pretty good idea of what the Discovery looked like, but to make an accurate scale model I needed some reference material to work from. In addition to analyzing scenes of the movie, I found several fan-created technical drawings and pictures of scale models online. Mind you, not all of these were completely accurate, so I had to be careful about which ones I used.

Determining the size of the model was next. I wanted to build a large model but how big would it be? The answer came down to one part. I decided to use a standard 8x8 LEGO dish for the main dish of the antenna array. The size of every other component would be derived from that, and in the end the ship would be just over 6 feet long.

I decided to build the command module using a traditional sculpture approach, and first used MLCAD, a computer application for virtually building with LEGO, to get the size and shape of a prototype sphere correct. Using the virtual sphere as a guide, I started building the real thing, integrating the pod bay doors and rear saucer panels as I went. I was inspired to use magnets to hold the pod bay doors to the hull, which resulted in a seamless look and allowed them to be easily removed. The interior would be added later, and is mostly an artistic interpretation of some of what is seen in the movie. My main focus was building a reasonably accurate pod bay with retractable pod platforms.

As I built the spine it became obvious the ship would not be able to support itself. I needed a stand that ran the length of the ship, with frequent supports running up to it. There was also no way I would easily be able to transport the entire 6 foot model about. I designed the stand to easily separate into 4 sections, each one taking the portion of the ship it supports along with it.

It took over a year to build the Discovery, and I redesigned several parts of the ship long after I thought they were complete. The fuel tanks along the spine were one of the first parts of the ship to be designed, using click hinges to achieve what I thought were the right angles. That original design remained until the very end, after the final Bricklink order arrived and I had finally assembled the entire model. It was pretty subtle, and I'm sure it would go unnoticed under all but the most intense scrutiny, but the angles of the fuel tanks, and the spacing between each spine section wasn't quite right.

I ended up completely redesigning the fuel tank assemblies, using regular hinges instead of click hinges. I also widened the gap between each section, extending the ship about 2 inches overall, and requiring massive changes to the stand. It was a lot of work for seemingly small change, but I was now happy with the finished model.

The Leonov: Odyssey Two

Several times while working on the Discovery I had thought about building a scale model of the Leonov, from the movie "2010: The Year We Make Contact," to go with it. To build it to scale, an 8x8 LEGO dish would again be needed for the main antenna dish, and I had decided to use dark gray as the main ship colour. Unfortunately LEGO didn't make an 8x8 dish in dark gray. Since I was still busy with the Discovery I didn't give much thought to alternative solutions and simply kept putting it off.

With the Discovery complete, I started thinking about the Leonov in earnest, and decided to go ahead without what I thought was a critical piece. Once again I endlessly analyzed the movie and searched for resources online. I was lucky enough to find photos of the studio model used for the film, which were far better than the inaccurate scale models and schematics that were available.

Getting the armature right would be critical, so that's where I began. I again made use of MLCAD to help with the prototyping. Doing iterative design work on the 16 armature modules in the real world would be extremely time consuming. MLCAD allowed me to virtually build one module and reference it 16 times, making it easy to validate the look and size of the armature as I made changes.

I quickly discovered that the standard building techniques I was familiar with would not work for the armature. It was so heavy that it would fall apart under its own weight. I ended up running two lengths of connected Technic beams from one end of the armature to the other. All of the modules are connected to these central beams in some manner.

Having finished most of the command section and reactor, incorporating a lot of SNOT (Studs Not On Top) construction techniques to get the desired shape and details, it was time to deal with the antenna dish. It is a testament to the versatility of LEGO that in about 10 minutes I had a solution to the problem that had deterred me for so long. I used a black 8x8 dish sandwiched by two dark gray 6x6 dishes. Since I was already using black as an accent colour, it matched the rest of the ship nicely.

Once again, I thought I was almost done. I was extremely happy with how everything had come together and only had some small details to finish. I was showing the model to my friend Jude and he stated quite simply that I should motorize the armature. I laughed. I had previously considered it, but dismissed it as being practically impossible given the lack of space to work with. Of course he was quite serious, and I had to agree with him that it would be cool, so I set to it with gusto.

Most of the forward section had to be rebuilt to accommodate the necessary components, which included an electrical lead, motor, gearing and drive shaft to the armature. I was pleasantly surprised that the exterior shape and detailing remained completely unaffected by the massive interior changes.

The Leonov took around 5 months to build and was finished just before BrickFest 2004, the annual gathering of LEGO enthusiasts in Washington, DC, where it and the Discovery were displayed for the first time. They were very well received, with the Leonov even being voted Best Medium Sized Space Creation. I have since displayed them at the 26th Annual Toy and Hobby Show in Toronto, Ontario, Canada as part of a display organized by the LEGO users group rtlToronto, where they were also well received.

Recently Tim Drage of Spite Your Face Productions sent me an e-mail to compliment the Discovery, mentioning that it would have been cool to have it all those years ago when they made One: A Space Odyssey.

So I suppose in a small way the project has come full circle, right back to the place that inspired it all.

Jason resides in Canada's capital city, Ottawa, Ontario, and makes a living writing computer software. His other obsession is unicycling, and he can often be found exercising his balance skills around town.

You can see more of his LEGO creations, and some of the other things that keep him busy, on his website: www.truedimensions.com.

Building: Technic

The Quick 17-foot Bridge

by TJ Avery

What do you build for a local LUG train layout when you have only a week to do it?

I answered this question by constructing a truss bridge over 17 feet long. Keeping with my usual building style, I made something a little too big at the last possible moment.

This article will detail the building process and show how this creation came about. The selection, planning, assembly, transportation, and in-place modifications of this MOC will be explained in detail.

SELECTION

Prior to construction, I had known about the April 2005 TexLUG meeting for a couple of months and had planned to attend with a new creation. However, things were happening in my life (new job, new baby boy) and time flew by. Before I realized it, I had about one week to get ready for the meeting.

I finally chose to build a truss bridge because I had done it several times before and it was a familiar and easy process for me. It would provide a nice showpiece for our My Own Creation (MOC) display, and would make the display more diverse. A big bridge in a MOC display certainly has a "wow" factor for the kids.

PLANNING

The first step was to size the bridge. I took my bridge design spreadsheet and modified it to suit a particular arched shape. The main decision was to select a length, which was greatly dependent on the amount of parts I own.

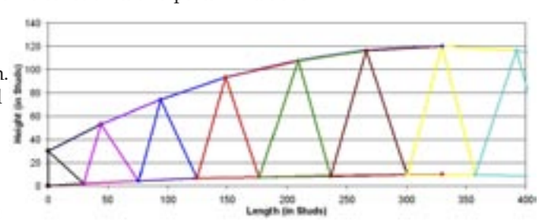
I knew that I could easily and quickly build a nice, long bridge with a free span of 8 to 10 feet. However, that was not very exciting and I wanted to beat my previous record of 7.5 feet and beat it by a good margin. I took a quick look at record bridge spans just for fun and found the top two:

1st: 29.2 feet (8.9 meter) span, a truss bridge at LEGOWORLD 2002
http://www.brickshelf.com/cgi-bin/gallery.cgi?f=27351

2nd: 16.9 feet (5.15) meter span, a truss bridge by Ben and Marco (2001, the Netherlands)
http://news.LUGNET.com/trains/?n=14081

I guessed that I could beat the second longest span, but taking on the longest was out of my capabilities given the time constraints and parts limitations.

I used my spreadsheet to design a bridge with a 17.3 feet (5.27 meter) span. I selected a simple arched truss design (a through-truss design where the trains travel "inside" the structure) that would span the desired distance efficiently.



My bridge design spreadsheet allowed me to establish the lengths of all members of the bridge, and then to view the overall shape and layout of the truss. Each member length is entered on the sheet, and the length is iterated until the overall bridge shape looks right. There is no real engineering done on the design by using the spreadsheet. It only calculates the geometry.

The other half of planning was getting the parts ready and make sure I had enough. I didn't have a lot of time, so I proceeded by just guessing that I had enough parts based on my "feel" of my inventory. I had to disassemble the last bridge I'd built (the 7.5 foot span) to free up some parts.

Through-Truss Arch Design
©TJ Avery, March 2005

1) Set the start point- the lower left point on the bridge:

Start Coordinate	X	Y
(in studs)	0	0

2) Establish the overall geometry-this will graph two parabolic curves

Dimensions	Studs	in	ft	in
Deck Height at Mid	10	3.1	0.3	0.08
Top Height at Mid	120	37.8	3.1	0.96
Length of 1/2 Bridge	330	103.9	8.7	2.64

*NOTE: Stud width is 8mm

Record Span (just FYI & for fun)

1112.5	studs
350	inches
29.2	feet
8.9	meters

Total Span

Estimated	Actual	Real	Unit
660	658.6	657.6	studs
207.9	207.4	207.1	inches
17.32	17.29	17.26	feet
5.280	5.269	5.261	meters

**"real" measurement taken off the real bridge moc (2 Apr. 2005 - TJA)

3) Enter bridge member lengths in BLUE only and watch the graph below.

Bridge Member Lengths	Left Half of Bridge Structure: Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Right Half - Mirrors the Left Half: Section 7	Section 8	Section 9	Section 10
Left Leg Length	30	53	72	90	105	112	114	112	103	90
- angle	90	74.1	75.3	74.5	72.0	74.6	75.5	72.1	74.3	71.6
Top Leg Length	50	54	58	62	58	63	63	58	62	58
- angle	27.3	22.8	19.5	13.4	8.7	3.4	-3.5	-8.8	-13.5	-19.6
Diagonal Leg	41	53	74	90	103	112	114	112	105	90
- angle	-63.1	-57.1	-65.6	-71.9	-74.4	-72.2	-75.6	-74.7	-72.2	-74.6
Right Leg Height	53	72	90	105	112	114	112	103	90	74
- angle	74.1	75.3	74.5	72.0	74.6	75.5	72.1	74.3	71.3	65.4
Bottom Leg Length	30	46	49	52	60	64	57	64	60	52
- angle	3.8	2.8	2.6	1.3	0.6	1.2	-0.07	-1.3	-.8	-1.4

Other sections of right half omitted.

ASSEMBLY

This was actually the easiest part. Using the plan established on the spreadsheet, I constructed each individual truss member one at a time and set them in piles. Once the members were assembled, then building the bridge would be a matter of pinning all of them together.

The one thing I didn't plan out was the cross bracing. I decided to just build the cross bracing on the spot as it was required. This included diagonal "zig-zag" bracing on the top bridge members and straight, perpendicular bracing on the bottom members (that would also function as supports for the train track).

I began assembly at home by pinning together the members of the center two sections of the bridge. I quickly realized that the construction was very flimsy. The longest members of the bridge were the 116 stud diagonals of the center section.

I also realized something else: a 17+ foot bridge is really, really big! I probably could have set it up in the living/dining room of our house, but it would not have been practical to try to live around the monster (and it would have blocked the TV).

And yet another realization happened: I was running out of time. This was Tuesday before the TexLUG meeting (that coming Saturday), and Friday night wasn't available to me for building.

So, I evaluated my building tasks versus time (and space) and devised a few plans:

1. don't assemble the bridge at home- keep it in parts and assemble in-place at the meeting
2. plan out and assemble all cross bracing
3. make cross bracing for bridge diagonals

Because the center sections were so flimsy, adding cross bracing to the diagonals became necessary. At first, I made the standard plate-n-liftarm zig-zag type bracing. This worked well, but required a lot of parts and I quickly ran out. I decided to use 6xn plates and link together the diagonals about mid-point along their length.

I knew that because I would not get a chance to set up the entire bridge and test it, there was a high possibility that I would have to make modifications and additions once I set it up at the TexLUG meeting. Therefore I packed quite a load of spare parts to take with me. As it would turn out, this was critical to getting the bridge assembled and functioning properly.

TRANSPORTATION

My revised plans made transportation much easier. I simply piled all of the bridge members (now bundled together in sections and labeled) in one large container, and I still had room for spare parts, train track, and a few train MOCs.

I'm glad I did it that way. I had originally planned to assemble the bridge at home, and then break it up into four sections for transport to the meeting. I have a full size truck, and I could have laid out four sections in the bed. I realize now that handling and carrying the sections would have been difficult, and any bumps along the way could have destroyed part of the bridge.

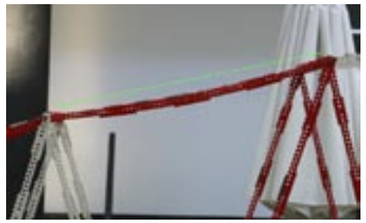
I knew I would have plenty of time and space at the TexLUG meeting to assemble the bridge.

SETUP AND DISPLAY

The setup of the bridge went surprisingly well. I used three tables placed end to end to first layout the deck sections (bottom members) of the truss. Then I began pinning the diagonals and top sections in place. Once a full section was complete, I would add the cross bracing.

This continued on, section by section, until the bridge was complete. Because there was a camber (a natural arch- the mid-point of the deck is raised up from the end points) designed into the geometry, the bridge was freely spanning the entire distance once fully assembled on the tables. The only parts touching the tables were the very ends of the bridge.

I quickly realized there was a problem with the bridge. The top members were taking so much compression load that they were severely bowed. This didn't look good, and certainly had the potential for disaster should one of them fail.



I stiffened and strengthened the top members of the bridge. Once these modifications were in place, I called the bridge "good" and we proceeded with using it. With some help from fellow TexLUG members, we pulled out the three support tables, and placed the ends of the bridge on the edges of the tables in the layout. This left nearly a 17 foot gap in the layout that the bridge spanned.

We then added train track to the deck of the bridge, and later added a monorail system. The bridge held up fine for about five hours, through most of the first day of our meeting.

Then, just before we left for dinner, it suddenly collapsed. It crashed onto the hard floor violently and with a sickening plastic-on-tile crunch. The impact was so violent that it broke parts (outside the initial area that failed) and sent other parts flying up to 20+ feet away.

There was much speculation about the exact mechanism of failure, but in the end, the bridge was too weak and the load too great. At the time of the crash, there was a train on the bridge that was about half the length of the bridge.

We decided to go have dinner and then to come back and rebuild. With the help of several TexLUG members, we reconstructed the bridge that night and also added further strengthening modifications. All those spare parts that I took were very much necessary, and I used quite a few in the modifications.

Day two of the TexLUG meeting went very well. The bridge survived with no problems, although we took off the monorail and limited the train size that ran over the bridge.

The final bridge length as measured by TexLUG members:

Effective span = 17 feet and 3 1/8 inches (5.261 meters), distance from center to center of end supports.

Clear Span = 17 feet and 1 9/16 inches (5.221 meters), distance between the inside support surface faces.

CONCLUSION

My first conclusion, and also a nagging thought I had throughout the TexLUG meeting, was that I should have fully assembled the bridge at home and tested it prior to displaying it. I could have strengthened my original design and produced a safe, strong bridge from the start.

On the other hand, given the time constraint, I like to think that I did a pretty good job! I probably spent about 9-10 hours planning and assembling the parts, and another 2 hours putting the bridge together on location. After the collapse, I (and three other people) spent 2 hours reconstructing it.

At the very end, the bridge was capable of supporting itself and enduring moving trains. It was an efficient design that produced a light, easy to assemble bridge. Although there was one major accident, only a few parts were broken and we all had a great time. My TexLUG friends certainly got a crash-course (no pun intended) in truss bridge design with LEGO parts.

Building: Alternate MOC

One of the easiest ways to begin building custom models is to build the alternate models that are shown in the instructions of a set.

Each issue of *BrickJournal* will present original alternate models from a LEGO set (in this case, the Speed Wings set pictured at the right) as built by a member of the adult LEGO community.

This particular alternate is a treat because it was created by Nathanaël Kuipers, who was discovered on LUGNET and hired by The LEGO Group a little before he was requested by me to build a MOC from just the contents of one set.

When he built his model, he challenged me to build an alternate too, so I built a model that's featured on the next page. From the same pool of parts, two completely different models were built.

What will you build?

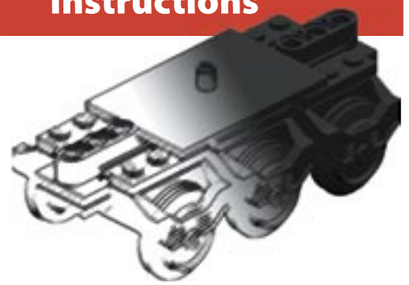
Model by Nathanaël Kuipers

Model by Joe Meno

Building: Instructions

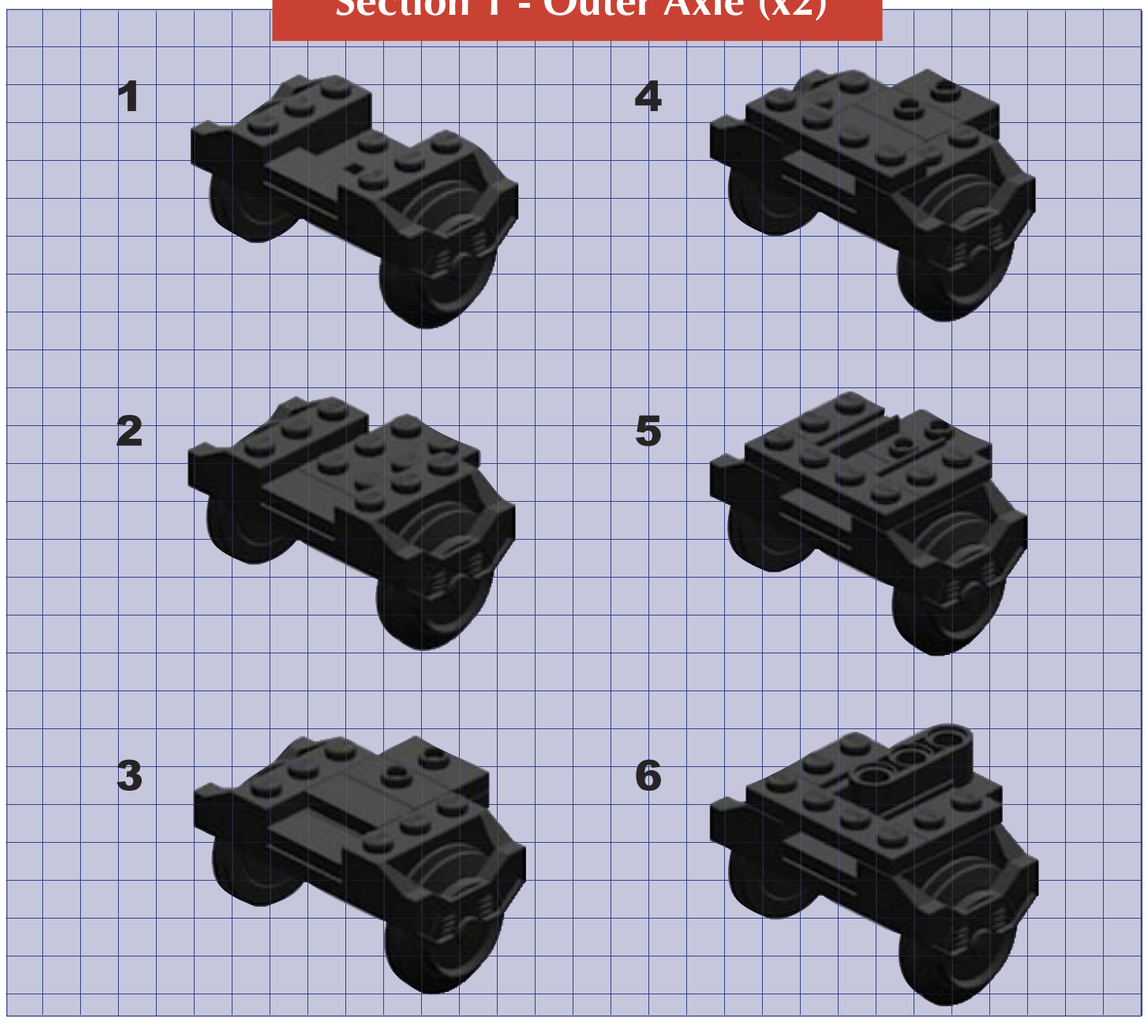
You Can Build It

Articulated 3-axle Train Truck



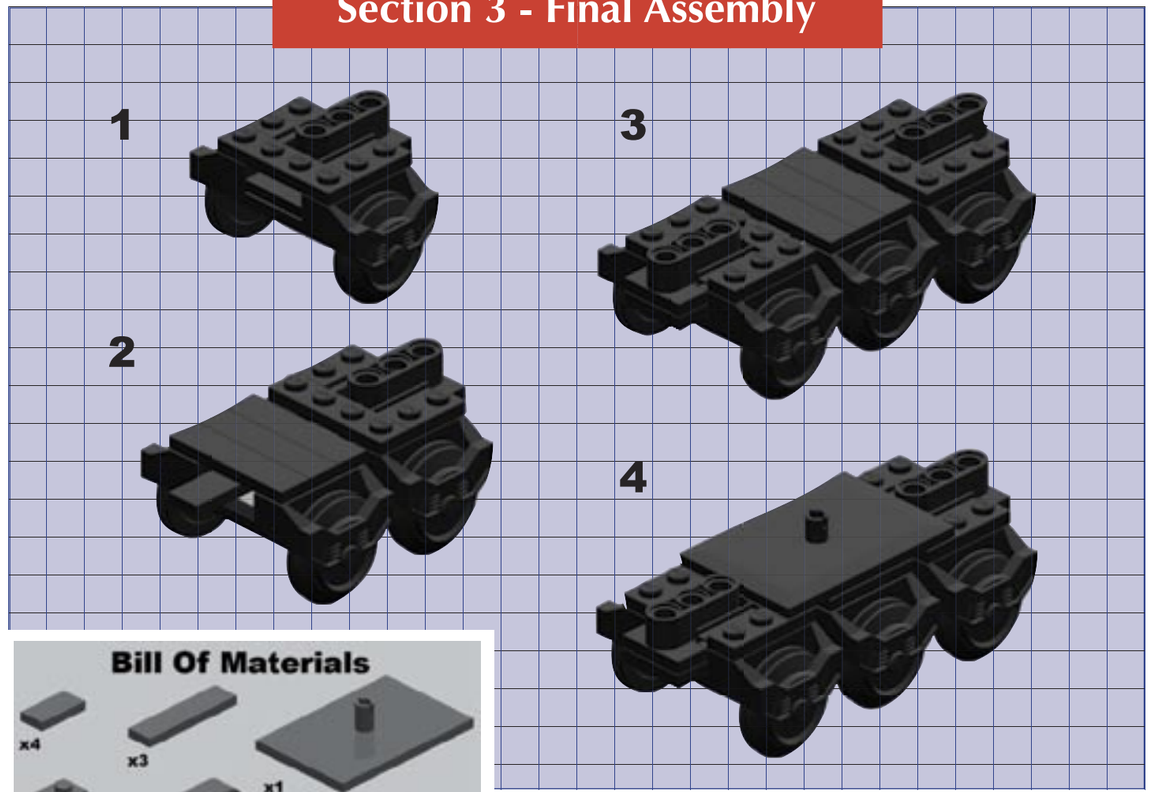
Model designed by Geoff Gray. It features a floating middle axle that allows the truck to negotiate curves without binding. If you would like to get instructions for building the accompanying container carrier car, please visit www.graybricks.com

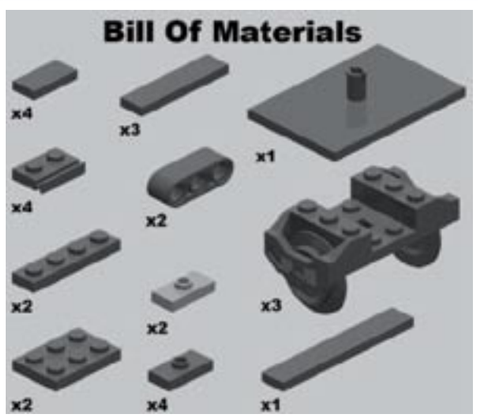
Section 1 - Outer Axle (x2)



Section 2 - Inner Axle (x1)

Section 3 - Final Assembly





Geoff Gray is Photo Editor for BrickJournal *and is a lifelong fan of the brick. He is a member of NCLTC (North Carolina LEGO Train Club) and is the founder of the Sand Hills Short Line LEGO Train Club. The instructions were generated with the LDraw suite of tools and modified for print with Adobe Photoshop.*

Building: Instructions

You Can Build It

Fire Engine 68

by Allan Bedford

The Origins of Engine 68

A couple of years ago I embarked on a project to create a series of 4-stud wide fire apparatus. This particular scale had a personal interest for me. Many of the LEGOLAND style vehicles of the early to mid-1970s were built that size; prior to the introduction of the modern minifig. The very first LEGO set I received as a kid was a 13-piece police car (set #611) and it was based on this scale.

Other than being 4-studs wide I really had only one other goal in mind for these models. I wanted, when possible, to build them using mostly common (or at least not rare) bricks, plates and so on. The model shown here was the first piece of equipment to emerge from these design sessions. I gave it the designation 'Engine 68.' Its appearance is not based on an actual vehicle, rather it is just meant to look like a fire engine.

What You'll Need to Build Your Own

As I mentioned, part of the intent behind the design of this engine was to keep the parts list simple. Here is the Bill of Materials (BOM) you'll need to produce the complete model. If you don't have exactly the pieces noted in the BOM, check the 'Alternative Solutions' section of this article for other ways to build the engine.

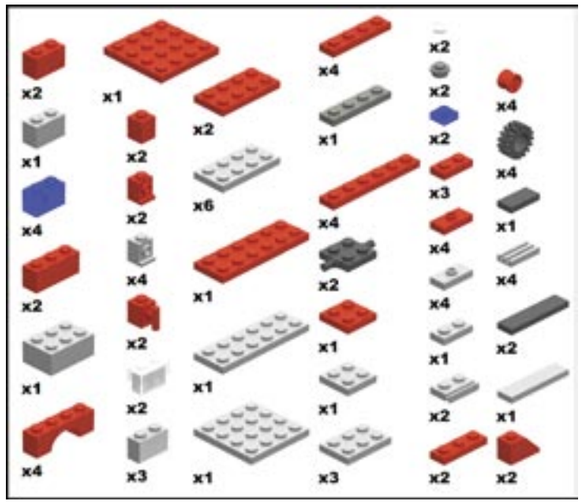
Alternative Solutions

Many aspects of this pumper lend themselves to variations of part selection, despite the small size of the model itself. For instance, if you don't have all the right parts in red then maybe you can substitute those pieces for yellow elements and build the whole thing in that color. Maybe you don't have the 1x1 bricks with handles on the side? Just leave them out; use plain 1x1s instead.

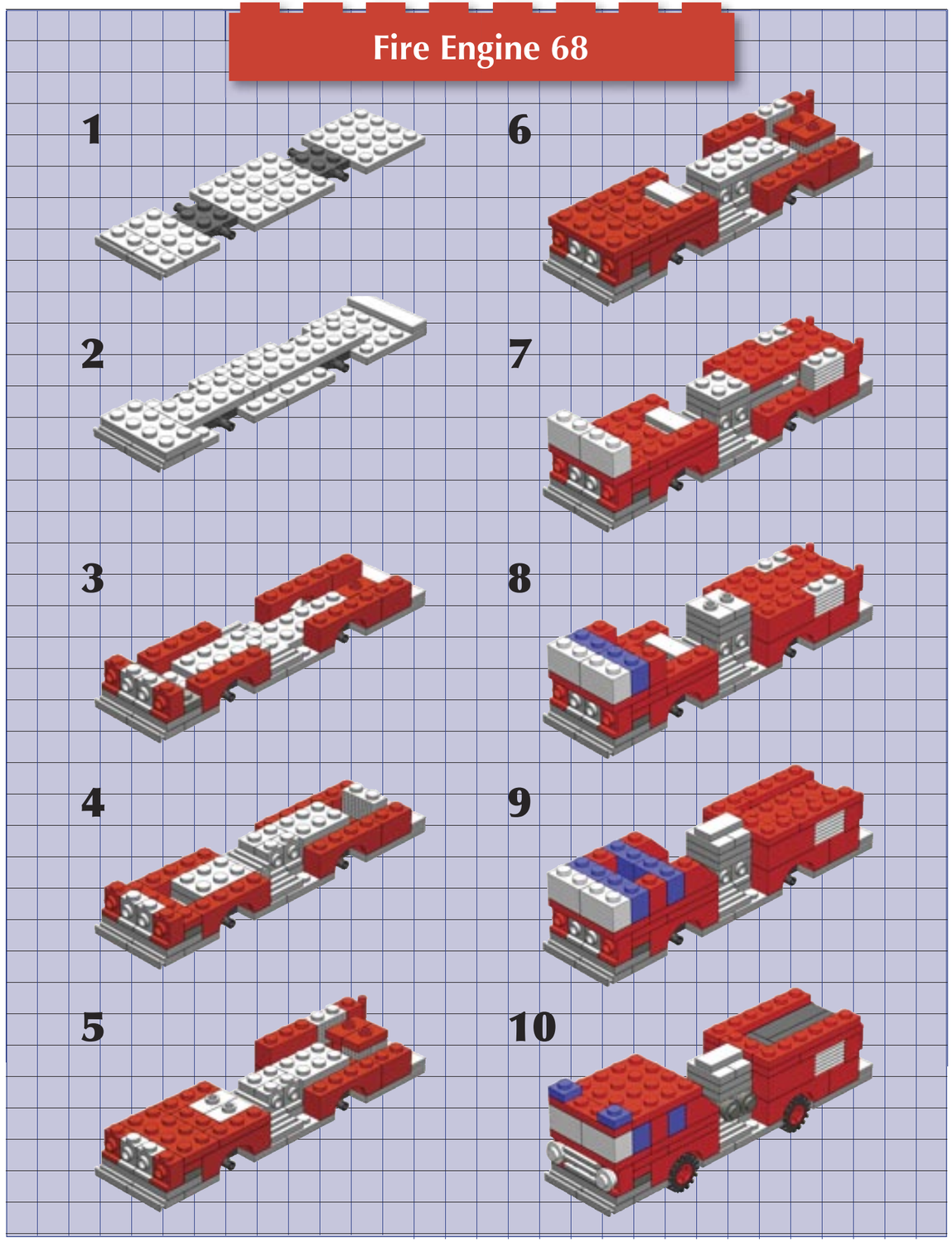
You can replace the four headlight bricks (where the engine grill and lights attach to face forward) with a single 1x4 brick with studs on the side. The point I'm trying to make is that you don't have to feel locked in to any one set of parts to build a particular model. Use your imagination and the pieces you have on hand. I hope you'll have fun building your own version of Engine 68.

Allan Bedford is from Stratford, Ontario Canada. He is the author of the forthcoming book titled The LEGO Builder's Guide *that is to be published later this year. The instructions were generated with the LDraw suite of tools and modified for print with Adobe Photoshop.*

Bill of Materials



Fire Engine 68



Building: The Minifig

Story and Photos by Bruce Hietbrink

If you look back at LEGO® catalogs from the sixties, you'll have a vague feeling that something is missing. Suddenly it hits you—it's like a ghost town. None of the creations were populated in the early years. In 1974, the Homemaker figures were introduced, but even though they were found in sets for the next eight years, it is fair to say that these blocky, round-headed figures never truly caught on. Jens Nygaard Knudsen, a LEGO designer, sought to address this, designing the precursor to the modern minifig. His first creations appeared in sets in 1975, but these were armless, legless beings with no faces. Knudsen went back to the drawing board, and three years later, in 1978, figs became poseable, with moving arms and legs. They also started smiling. Other figures have come and gone in the years since—DUPLO, Fabuland, Technic, Scala, Belville, and Jack Stone figures—but the minifig has become one of the most recognizable aspects of LEGO alongside the basic 2x4 brick.

The introduction of the minifig in 1978 began the Era of the Classic Smiley. Many of these early figures had stickers for torso patterns, and some still do to this day, but printed torsos soon became the norm. For the next decade there was no change in the basic fig; they gained different torsos, utensils, hats, or hairpieces to reflect their jobs as knights, astronauts, and all things in between, but they kept the basic shape and the same yellow, smiling face. In 1989, the world of the minifig changed. The new pirate theme brought different face patterns, and even different leg and hand elements, though the classic smiley still held sway in most themes. In 1990, the ghost was introduced as the first specialized fig. This figure had a specialized ghost body and a black head (actually black, red, and clear heads had previously existed, but not in true minifigs). In 1992, classic smileys were still the norm, but specialized face patterns started showing up in themes like town, space, and castle.

1993 brought the beard, and 1994 established the precedent that aliens and robots could have non-yellow heads. In 1995, the skeleton was introduced as another specialized figure. Also by this point, specialized face patterns seem to have taken over, with relatively few instances of the classic smiley. In 1997, Native Americans became the first figs with recognizable (albeit caricatured) ethnic identities. These were also the first figs with explictly drawn noses (other figs occasionally had noses implied by the shape of facial hair). These were followed in 1998 by Asian figs in the ninja theme.

Starting in 1999, LEGO started running licensed themes with the introduction of the Star Wars line. Licenses have been a great boon to the diversity of the minifig world, with many innovations driven by the needs of the license. For instance, 2000 brought molded heads with Jar-Jar. Many other molded heads have shown up since, including C-3PO, Greedo, and Yoda, as well as Dobby and the goblins in the Harry Potter license. In 2001, the TIE Fighter set included blank heads underneath the Stormtrooper and TIE Pilot helmets, and the pilots head was brown plastic. This added fuel to the debate of whether human minifigs should be produced in skin tones other than yellow to represent different races. In 2002, the needs of the Star Wars and Harry Potter lines led to the introduction of shorter legs (aka Stubbies), which have since also been used for children.

Also in 2002, LEGO introduced double-sided heads, so the face could be changed by turning the head around. In 2003, LEGO ended a long debate by finally introducing human figures with non-yellow faces, starting with Lando Calrissian. They have since decided that figs that represent real people (i.e., actors and athletes from licensed lines like Star Wars, Harry Potter, Spider-Man, and the NBA) would have realistic skin tones, while other figs would remain yellow. Also in 2003, the NBA/basketball theme led to the introduction of spring-loaded legs and differently shaped arms, to allow the figs to throw a basketball. Now in 2005, electrified figs have been introduced that light up when you press on the head.

What will happen next to the minifig? Surely each new year will bring a myriad of new torsos, heads and accessories. Perhaps other "action" features will be introduced, following up the spring-loaded legs and the light-up features. Perhaps elements will be altered to give a greater variety of shapes, such as the short legs, peg leg and molded heads. We know, for instance, that mermaid fish-legs will be introduced in an upcoming Harry Potter set. Whatever comes, after more than a quarter century it is certain that the minifig will remain as an integral part of the LEGO experience.

A variety of fig-like characters have been added to interact with the normal minifigs.

Molded heads have been used for many memorable characters.

Just a few of the hairstyles and colors that minifigs have worn.

Over the years there have been minor changes in the molding of the heads and torsos.

Even such things as the capes have evolved over the years.

A variety of leg styles.

At first only the chest and face were printed, but over time the printing has expanded to include the back, the legs, the toes, the back and top of the head, and even the arms.

For More Information..

Many resources exist for minifigs:

Folkart Thielen and Kenny Sze have catalogued minifigs from different themes:
http://www.minimundo.de/
http://www.legofigs.com/fame-set_e.htm

James Stacey has historical data for the minifig, including the original US patent:
http://www.minifig.co.uk/default.asp?id=10

Much of the history of the minifig can be gleaned from perusing old catalogs:
http://library.brickshelf.com/scans/

Community sites such as Bricklink, Peeron, Brickset, and LUGNET have comprehensive databases:
http://www.bricklink.com/catalogList.asp?v=3&catType=M
http://www.peeron.com/
http://www.brickset.com/
http://guide.LUGNET.com/set/

In 1978, Bruce Hietbrink received a copy of set 462, Rocket Launcher, and he's loved minifigs ever since. As an AFOL he's an active member of the online community, acting as an admin on Classic-Castle.com and participating in LUGNET and other forums. His personal site—www.ozbricks.com/bricktales/—features illustrated stories such as the Lord of the Rings. His blog—www.vignettebricks.blogspot.com/—highlights vignette creations by members of the community.

Bruce invites you to check out both of these sites.

The Minifig Museum of Modern Art

More than five years ago, Ashley Glennon created a LEGO® fan website that mocked the modern art world, caused LEGO fans to laugh, and left the public scratching their head. BrickJournal *recently caught up with Ashley to explain his classic website, and show a few surprises!*

BJ: You have a LEGO "art" website. Explain what this is all about.

AG: My LEGO website consists of a minifig scale modern art museum. http://www.minifigmuseum.freeservers.com. The site is a parody of a real modern art museum and it assumes the visitor will take on the persona of a minifig while visiting. The site was a fun and creative way for me to take advantage of many of the parts I had, and at the same time, prove to myself that I did not have to have a million brick collection to be a part of the LEGO community. Furthermore, the site sort of pokes fun at the subjectivity of modern art.

Credit and inspiration for my art site goes to Eric Brok. Eric had posted a few small works of art on his "mind" site back in 1999 (http://home.zonnet.nl/ericbrok/lego-mind) that inspired me to take this to a new level.

BJ: Despite your lighthearted approach to your site, it has received a lot of recognition. Explain some of the events that transpired after the site debut.

AG: Building the site was a lot of fun, but I never thought it would be as popular as it was. I launched the minifig art site in Sept. of 1999. The first recognition the site received was from LUGNET. I was extremely proud of this because LUGNET "users" were the peers I wanted most to please. http://www.LUGNET.com/cool/site-150.html. Next, Yahoo! selected the site as a top pick on the web. Immediately after that, my hits from Asia and Japan went sky high. Soon after, a Japanese site conducted an interview with me http://www.1101.com/planet/10.html and the traffic continued to grow. To top it off, the St. Petersburg, FL, newspaper ran a short blurb on the site. http://www.sptimes.com/News/010300/Technology/Site_seeing.shtml . To this very day, I still receive e-mail messages from people around the world saying how much they enjoy the site. One day I will need to update the site!

BJ: What are some of your favorite works from the site? And feedback favorites?

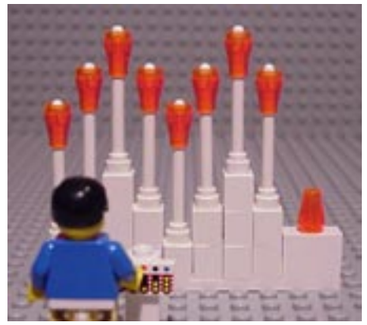
AG: I really like "Hippy Heatsinks" found in the South Hall, which is essentially several stacks of different colored hinge-plates. I also really like "Sine of Fire" in the Glass Works area. I imagine a minifig standing in front of it, controlling the sine wave with the "controller tile" in the foreground.

I get quite a few e-mails about "Articulated Reflection," found in the East Hall and the simple "Neon Rain" found in the Glass Works area. A lot of people ask about the silver bricks in the reflection piece, and then others simply write to say they think the image is hilarious, noting the minifig smiling back at them. The Neon Rain piece tends to attract more serious comments about minimalism. From what I recall, the work most commented on by real life artists is "Captured Circles" in the West Hall.

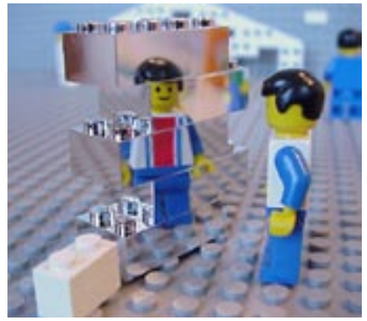
BJ: Explain the names of your works? Are these real people?

AG: I built all of the works on the site and the names of the "artists" are fictional. Some of the names, however, are scrambled versions of my friends and family members' names. The names of the works themselves came straight from my imagination, inspired by the serious-but-silly names I often see on public works of art.

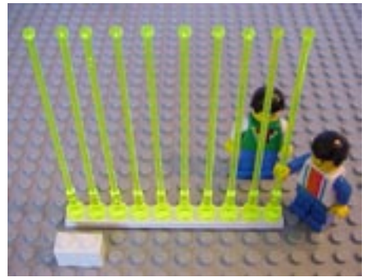
Hippy Heatsinks: Wesley Powers: Aluminum and Steel: 1972



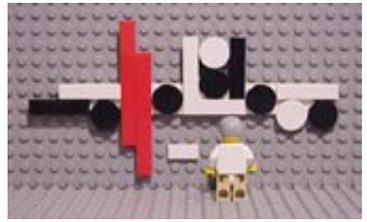
Sine of Fire-Interactive Sculpture: Gift of Electrofire, Inc. 1999



Articulated Reflection: William and Jeffrey Design Group: 1998



Neon Rain: Rob Brunton: 1995



Captured Circles: Robert McNeill: Enamel on Wood: 1971

BJ: Have you created any new works, since?
AG: Yes. I created about a dozen new miniature art works that I displayed at the NWBrickCon two years ago. I have not updated these works to the site or posted any pics online, though.

BJ: It is our understanding that you have something exclusive to show us related to your site?

AG: Way back in 1999 I built three pieces of minifig art that I've never shown to anyone (except my family). These three works were designed and photographed at the same time as the rest of the site, but for some reason I never got the images posted. So here they are…a *BrickJournal* exclusive! The images may not be of the best quality since they were taken more than five years ago.

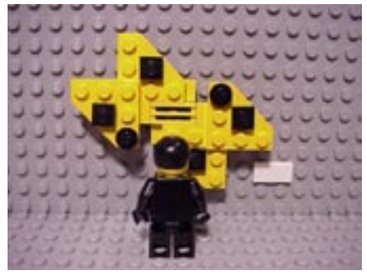
Here's some information about the images:
a. The first work I was going to label "Complex Symmetry."
b. The second work was going to have the word 'slant' in the name but I never actually finished naming it.
c. The third work would have likely received a name like "Twirly props."

BJ: When did you begin your LEGO collecting and playing in earnest?

AG: As far back as I can remember I have played with LEGO bricks, but it was when the MINDSTORMS sets came out a few years back that really re-kindled my passion.

BJ: What was your first "significant" LEGO set? Significant can mean anything you want.

AG: There are actually two sets that I can remember as being significant. I will define these as being significant because they marked my keen interest in wanting to collect and own more LEGO sets. The first was an Exxon truck and the second was a red-cross helicopter. I remember buying these at a K-Mart around 1976 or 77. I already had sets before this time, but for some reason, these two sets stick out. For what it's worth, I still have the original Exxon truck box from that purchase. It's smashed and ugly, but I still have it. I probably still have the parts, too.



a.

b.

c.

A Tour of
The Minifig Museum of Modern Art

As mentioned previously, the museum can be found here: http://www.minifigmuseum.freeservers.com/ and has the following display areas:

North Hall: Six works on display.

South Hall: Four works on display.

West Hall: Six works on display.

East Hall: Four works on display.

Grand Hall (houses large or oversized paintings and sculptures): Eight works on display.

Mezzanine: Three works on display.

Glass Works: Eight works on display.

Glass Works II: Four works on display.

Special Exhibits:Two works on display.

The Museum is open 24 hours, seven days a week, and is only closed for maintenance from time to time.

The Museum also has a shop that sells assorted souvenirs.

Building: Castle

Captain of the Guard, lower the drawbridge!

by Magnus Lauglo

Welcome to the Castle page! Beginning back in 1978 with what we all now know as the "Classic Yellow Castle," the mighty LEGO® Castle line has enjoyed a long history and an ever-changing style and lineup of sets and sub-themes. Over the years, the LEGO Castle has progressed to encompass a wide range of themes, beyond the original European style medieval castles and knights.

Yet for many longtime Castle-heads, the Castle line will always be associated with the sets we were familiar with back in the '80s. Mention "King's Castle" or "Guarded Inn" and many an eye will light up in recognition and fond memory of the original Castle sets, based on modular castle walls and the two rival factions—the Crusaders and the Black Falcons. Who were the goodies and baddies? That was up to whoever was playing and building. In recent years, the re-releases of two excellent sets in the Legends' series confirmed the special stature of the classic Castle line. Moreover, with their simple but dynamic modular design and their functional realistic walls, the classic sets have been highly influential to many AFOLs' castle building styles.

Since then the Castle line has gone in various directions including fantasy, the Ninja line and recently, the more 'child-at-play' oriented sets. While it has been frustrating for many adult Castle fans (many of whom are medieval history buffs) to see the Castle line move away from its initially realistic depiction of the Middle Ages, the newer sets have yielded new interesting pieces and minifig related accessories. For a few years the Ninja line took us away from our drafty cold fortresses for a refreshing if brief respite in the colorful lands of the Far East. At present, the future of LEGO Castle lies in the upcoming Viking sub-theme which will likely be released later this year, complete with longship, the historically fictional horned helmets and sea monsters!

While town/train builders replicate the world as they see it and "Spacers" stretch their fantasy to new universes, Castle builders depict a world that is at both familiar and foreign. Whether recreating medieval Europe or putting to brick the worlds of Tolkien, the Castle builder brings to life a world both dark and harsh, with limited resources and technology, but also exciting and full of danger and adventure.

Many ambitious builders focus on building large castles, but humbler and more manageable projects can be equally enjoyable and original. The Classic Castle City (3Cs) is a modular building system inspired by the classic castle sets of the '80s that has become very popular with the advent of LEGO conventions and communal events. The recent craze for small vignettes has taken the Castle building community by storm, reminding us that less can be more. And micro-scale castle building offers all sorts of possibilities, which have yet to be explored by most.

The Castle community has taken some hits recently due to the increasing gap between the play-oriented sets that LEGO is producing, and the kinds of sets that we would like to see in terms of parts selection and building inspiration. Yet some enterprising castleheads, resourceful as were our medieval ancestors, are finding ways to change with the times. While many Castle builders have understandably bemoaned the recent change of the gray brick to a brighter and less stone-like shade, others have been busy creating castles in other colors. Castle builders are learning to use new colors and building techniques to achieve the overall results we are seeking.

After all, isn't creativity what this hobby is all about?

Essential Links for the Castle Builder.

There is a wealth of pictures, information and interaction between Castle-heads on the internet, it can easily seem a little bewildering at first. If you're new to the AFOL community here are some of the best places to start your wanderings.

http://www.classic-castle.com
Classic Castle.com likes to think of itself as "The source for all your LEGO Castle needs." In addition to building tips, links to creations, stories and more Classic Castle hosts a vibrant community of AFOLs in the Forums discussing everything from their newest MOCs to the newest Castle LEGO sets.

http://news.LUGNET.com/castle/
LUGNET's castle theme page, with many years worth of archived Castle related online discussion.

http://www.LUGNET.com/fibblesnork/LEGO/guide/castle/views.html
Fibblesnork Guide to LEGO's offical Castle sets – only good up til 1997, but still a great resource for tracking down that old set.

http://www.mindspring.com/~ffilz/LEGO/castle.html
A hugely expansive links page with hundreds of links to Castle MOCs, themed online discussions, wargaming, minifig factions and more.

Magnus Lauglo has been building for over twenty years; and although he did build somewhat covertly for a few years as a teenager he resisted a true Dark Age. He grew up in Europe, studied history and and has always been fascinated with the medieval period, so it is no surprise that his LEGO passion has taken the direction of the Castle theme in particular (though he also dabbles in military/space type building when he thinks no one is looking). When not planning world domination by way of the Black Falcons, Magnus enjoys listening to rock music and playing on his PC. Magnus has been on the BrickFest staff for two years and is involved in WAMALUG.

Building: Bionicle

It's getting tougher to find the "LEGO®" aisle in toy stores these days. Traditional LEGO construction sets are more often than not hidden behind strangely shaped canisters featuring robotic-looking creatures. Shoppers are more likely to stumble upon this "Bionicle" aisle before ever seeing another LEGO set, for the simple reason that LEGO Bionicle has been the company's biggest selling product line for the last several years.

But what IS this Bionicle invasion, anyway?

To parents, it tends to be a complete mystery. Robotic warriors from a tropical island or ancient city of legends. A lexicon so complex it has its own dictionary. A layered story involving collectible disks and masks: Toa and Turaga, Makuta and Rahkshi, Vahki and Matoran. Bohrok and Bohrok-Kal. Video games, shoes, backpacks, and party favors. Even Halloween costumes.

To kids (typically 6-12 year old boys, for whom Bionicle is squarely aimed), Bionicle is a richly populated universe with cool LEGO sets, movies, books, an ever-updating storyline, Bionicle comics shipped with their LEGO Club magazine subscriptions (http://club.LEGO.com), its own official website (http://www.bionicle.com), and popular online resources such as BZPower (http://www.bzpower.com) and Bionicle Sector 01 (http://www.bioniclesector01.com).

Bionicle begins as a story set on the island of Mata Nui (recently expanded to the ancient city-island of Metru Nui) that pits several good guy Toa against bad guy Makuta and his minions. The Toa protect the other inhabitants of the islands, the Matoran, from the vicious Rahkshi and Visorak, among other nasties. Each is available as a set.

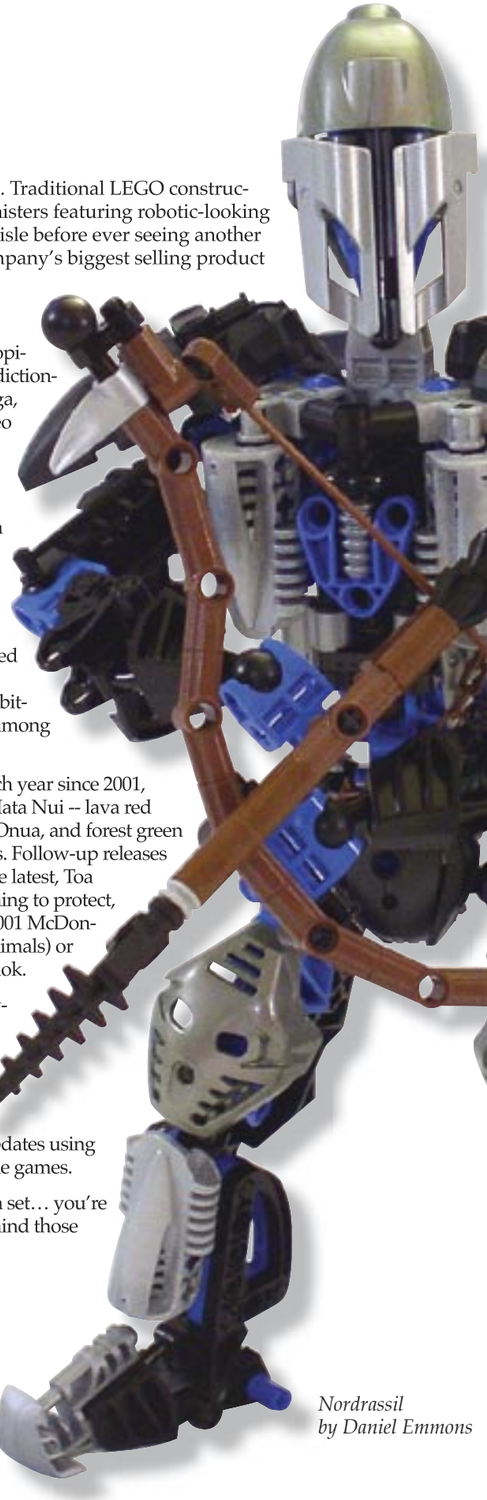
New and updated construction sets have been released at least twice each year since 2001, when Bionicle was widely introduced. The first six color-coded Toa of Mata Nui -- lava red Tahu, icy white Kopaka, sea blue Gali, stone brown Pohatu, deep black Onua, and forest green Lewa -- were an instant hit, winning awards and shattering sales records. Follow-up releases have also been strong, with updated Toa -- Toa Nuva, Toa Metru, and the latest, Toa Hordika -- continuing the ongoing story. Of course, the Toa need something to protect, so there have been several rounds of Matoran sets released, the first in 2001 McDonald kids meals. Those poor Matoran often need help, from wild Rahi (animals) or Makuta's Rahkshi "sons" to their own Vahki protector machines run amok.

Driving the story (and not coincidentally, LEGO set sales figures) are several media, primarily the Bionicle comics from DC and a popular series of books from Scholastic, most authored by Greg Farshtey (who also writes the comic). There have also been two well-received com puter-animated films released directly to video/DVD ("Bionicle: Mask of Light" and "Bionicle: Legends of Metru Nui"), and a third is in the works. The official Bionicle website likewise provides storyline updates using text and animation, and has also included two immensely popular online games.

When you get into Bionicle, you're not just buying a construction/action set… you're entering a universe full of dramatic good-vs-evil action. There's a lot behind those little canisters on the shelf, just waiting to be discovered.

To see many more amazing Bionicle-based creations, visit this creative forum on BZPower: http://www.bzpower.com/forum/index.php?showtopic=175513.

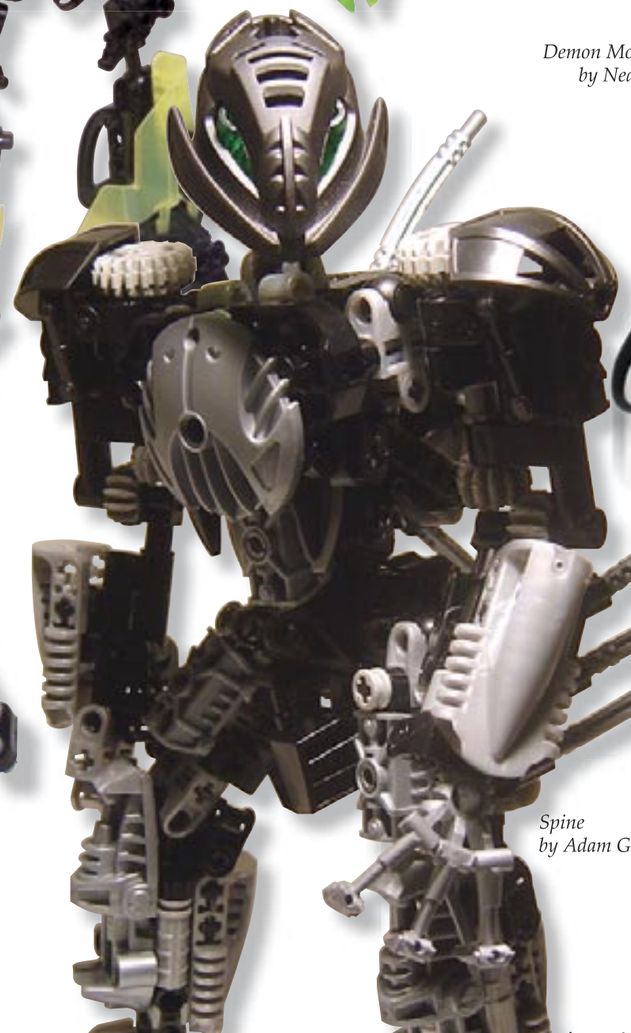
Kelly McKiernan is co-owner and administrator of BZPower.com, the largest and busiest Bionicle fan site on the web.



Nordrassil
by Daniel Emmons

Ahnok
by Peter Dolan

Toa Mahkaal
by Kyle Barnhill



Demon Motorcycle
by Neal Miller

Spine
by Adam Griffin

ONCE LEGO®, NOW MONSTERS!

by Greg Hyland

In 2002, LEGO put out a line which, after Star Wars, became my second favorite all-time line—Studio Monsters! For years I had wished that they would put out sets with Dracula, the Wolfman, the Mummy, and a Frankenstein Monster, and finally, here it was! LEGO had already established a slight lean towards the "dark side" with lines like 1997's Fright Knights, which gave us the Witch mini-figure, and the Adventurers 1998 Egyptian line, which made me hopeful by giving us the Mummy (or "Pharaoh") mini-figure. Plus, throughout various Castle and Pirate lines, we had a good amount of skeletons and ghosts! A full monster line didn't seem that far off.

I found out about the Monsters line from a LEGO "insider" I knew, and as soon as the sets showed up on Shop@Home, I had to have them! And fast! It was the first line I ever pre-ordered, and I placed my order on the first day it was available. When I finally got the sets, I was not disappointed.

The line consisted of only four sets. It was designed to be part of the LEGO StudiosMovieMaker system. So while it gave us all the monsters we wanted, just like the other Studio and Spider-Man sets, it also included an assortment of cameramen, directors, boom-mic operators and spotlights. One set, the Scary Laboratory, came with a make-up chair "set," where I guess we could pretend Jack Pierce was putting on Karloff's make-up! The sets all came with a unique monster and were, like most LEGO lines, all of various sizes, one for any budget.

The Curse of the Pharaoh is the smallest set, and it comes with the Mummy. Unlike the Pharaoh that came with the Egyptian Adventurers line, who was dressed in brightly coloured ornamental garb, this Mummy is the recently awakened, all-in-dusty-bandages Mummy we wanted. One of the neatest features of this whole line was that the figures had two faces, one on each side of the head. And with the hair or headpiece on, you'd never see the other face. The mummy had two versions of his face, one with his eyes closed and one with his eyes opened. The set consisted of a small little Egyptian tomb with a lid that opened up. It also came with a plain skeleton and a glow in the dark skull, to add to your collection of macabre LEGO items.

Next up in size was the Werewolf Ambush. This set came with the Wolfman, who came in both human and werewolf form. By exchanging the normal minifigure's torso with a similar torso, but with a torn-up shirt and grey hands and putting the werewolf head over the regular head, you could transform him into the Wolfman! This set also came with, what I call, the male and female victims. While just seeming like normal town minifigures, these two also had two faces, one a normal happy version, and the other the scared version. The two "studio actors" also seemed to play the parts of Mary Jane Watson and Norman Osborn (the Green Goblin) from the Spider-Man line! Good to see they're getting more work here outside of the Spider-Man franchise. The Werewolf Ambush set also came with an old car for the hapless couple (although I like the old car designs from the Adventurers line better) and a weird tree, that turns from a "normal" tree to a creepy tree with "evil" eyes to look down on you and be, well, scary!

The Vampire's Crypt is the next set up, and the first to contain something of a semblance of buildings, or set pieces. This set comes with the vampire, but we all know he's Dracula. Dracula, has again, the reversible face, one with a nice smile (but with vampire teeth sticking out!) and the other having an opened mouth with… what's that? Can it be? Yep, that's blood dripping from his mouth! Dracula also has a neat new hair piece, that is perfect for anyone wanting to make their own X-Men Wolverine minifigure. The set also comes with what I guess is a "Hunchback" assistant, although it could be Renfield (if were thinking Dracula) or I like to use him as Igor (if we're thinking Frankenstein). We also get another male victim, because I guess including the female victim would be too suggestive to go with a vampire, especially with that blood dripping from his mouth! I guess the guy could be Van Helsing, or some sort of vampire hunter if you want. While the building set elements aren't too interesting in this set (it actually comes with a printed cardboard backdrop), some of the props are interesting. I like that we get a LEGO coffin with this set. It's the same coffin that came in the Egyptian Adventurers line for the Mummy, but this time its brown and has a new lid with the impression of the vampire on it. We also get a 2x2 tile with garlic printed on it. I guess that's to chase that vampire away with. No appearance of a hammer and wooden stake, though, but an extra hammer from your space sets and a Harry Potter wand would do the trick. We also get a boom-mic operator in this set, because we want to make sure we hear the blood-sucking and screaming!

The last and biggest set is the Scary Laboratory. This set is essentially Frankenstein's castle. It comes with a

Frankenstein Monster that has a "hat" that gives him the classic flat-head design. This has become one of my all time favorite mini-figures! We also get a Doctor/Mad Scientist, who because of his head design is more like a Dr. Jekyll/Mr. Hyde than a Dr. Frankenstein. The one side of his head is a weird smiling mad scientist face, but the other side is a rougher monsterish face. We also get another male and female victim, and another mandatory Movie Director figure. The props in this set are great. You get a castle-ish tower set up that has an operating table that

(continued on next page)

you can raise up, just like in the classic Frankenstein movies. There are some general laboratory machines and props that are pretty cool including a "working" Tesla coil, all with that classic Universal Monsters look and feel. There's also a gateway to lock your victims into the castle, and a skeleton and a brain in jar for good measure. While there is no real castle building in this set, it wouldn't be difficult to take the elements from this set and add them to any other castle set and get yourself a neat Frankenstein's castle.

One of the interesting things about the Scary Laboratory set (although this was also something the set got criticized for) was that it came with a CD-ROM with sound editing software an a library of sound effects on it. While this is very kid-aimed software (like the LEGO Studios original animation software), you could do some interesting things with it. But what really makes the disc special is that it has both a stop-motion Monster movie, and a Spider-Man movie (the same CD-ROM came in the Spider-Man Action Studio set). Both movies are really well done, and the fun thing about the monster movie is the scenes of walking mini-fig skeletons chasing our frightened victim couple around. Worth checking out, although some were annoyed that this CD raised the price of the set up overall, and people didn't want to pay for a disc that they'd never use.

You may have noticed that all these sets don't use any of the monster's classic names, despite names like Dracula and Frankenstein being public domain. I did hear that at one point LEGO was considering licensing the classic monsters from Universal, but decided to drop that idea because the general monster looks aren't copyrighted, so there was nothing to stop them from doing similar looking monsters, and not have to pay the licensing fee. Although I love the designs that LEGO used, I wonder what a Lugosi Dracula or a Karloff Frankenstein Monster minifigure would have looked like.

Sadly, the Studio Monsters line never continued, even on it's own without the discontinued LEGO Studios line, like Spider-Man line did. It would have been great to see more sets, possibly giving us a more expanded Frankenstein and Dracula castle, or possibly some neat spooky graveyard. While those sorts of things can be made on your own, the real disappointment to me is that there would be no more character figures made. While not copying the Universal Monsters, you still could have had some good classic monsters "inspired" by them. A Bride of Frankenstein, even with her crazy hair could have been done. An Invisible Man, both wrapped up in bandages and in a much-wanted clear mini-figure design. A Creature from the Black Lagoon, or rather "Sea-Creature," would have been great, especially to add to all your Divers sets. A Phantom of the Opera, again with the reversible head, showing his masked face and his scary unmasked face. And a whole bunch of mini-figure zombies would have been fantastic… imagine, an army of the mini-fig undead to populate your train layout!

So while this line is gone, it's hopefully not forgotten. Like both Star Wars and Harry Potter, these sets brought non-AFOL collectors into the hobby. While we keep hearing that the AFOLs buying dollar isn't that big a percentage of profit to the LEGO Company, sets like this surely can't hurt. It still would be nice to see more things like this in the future. Meanwhile, if you haven't picked up these sets and you are a monster fan, if you do happen to run across them, be sure to pick them up!

(For anyone that collects the Japanese figure toy, Kubricks, Medicom Toys did license Universal Monsters and did two series of figures of them. Kubricks figures are kind of like larger LEGO minifigures, so seeing these figures is a clue to what LEGO might have possibly come up with, too.)

Greg Hyland has worked as a writer and illustrator for the last 15 years. He has worked with such characters as Beetlejuice, The Tick, Droopy Dog and The Mighty Ducks, and has published his own character, Lethargic Lad, in comics and on-line since 1991. As a kid, Greg dreamed of working for the LEGO Company, and has been lucky enough to have done so as an illustrator for the last three years, primarily doing spot illustrations and comics for use in LEGO Magazine. He also wrote and drew the AFOLs comic book. Greg's other LEGO related work includes many Star Wars LEGO comics, seen at fbtb.net and in Star Wars Insider magazine. Other current work includes Lethargic Lad back-up stories in every issue of DORK TOWER comics, and this July LETHARGiC LAD JUMBO-SIZED ANNUAL #3 will be on sale in finer comic stores everywhere. Greg lives in Canada, where they use two dollar coins and 32 degrees means it's pretty hot outside.

Building: Custom Parts

Building a Little Armory

by Joe Meno

One of the challenges that builders face is not having desired accessories. While the majority of the community use LEGO accessories, some people make their own. *BrickJournal* chatted briefly with Jeff Byrd, owner of The Little Armory, one of a growing number of vendors that offer custom-made parts.

A sample of the items at The Little Armory
Photos courtesy of The Little Armory

BrickJournal: What do you do 9 to 5?
Jeff Byrd: Plot to take over the world.

BJ: When did you start your LEGO hobby?
JB: I guess I'd have to say 1980, technically. The coveted Yellow Castle was my first set.

BJ: Did you have a dark age? When?
JB: I would say no, since it took me several years to actually get into collecting and building (somewhat). I didn't really get hooked until the mid 90s. From there it's been off and on, but I've always had something LEGO in my possession.

BJ: Why did you decide to make custom parts?
JB: That's an easy one. Back in early 2001 when the TIE Fighter was released...the Stormtrooper just screamed (pun intended) to have a more accurate blaster. So one day, when I was cobbling some plastic bits together for something completely different, the basic design for the trooper gun just hit me. So I started creating other blasters from scratch, to go along with the trooper.

BJ: When did you start?
JB: Technically...I started producing the pieces around June/July of 2001.

BJ: How have you done...did you encounter initial resistance?
JB: Simply put—rather well. However, when I started this venture, I had NO idea, or concept of the actual LEGO community. Weird, huh? I used to visit certain websites from time to time, reading about sets and such, I still didn't have a clue as to how big the community really was. Having said that - I wasn't sure how the community was going to receive me. I mean, here I come with something that isn't official LEGO. I had a few purist comments at first, but now Little Armory is known worldwide. I must have done something right.

BJ: How do you design your weapons?
JB: Initially, I handbuilt 1:1 models, or prototypes of whatever the piece was. Of course, I didn't know what I was doing either. I wised up quickly, and started designing on paper, then in the computer (CAD). I can't even begin to tell you how much easier it is now.

BJ: You also have armor, so I assume that is another hobby of yours...Tell us about that.
JB: Oh, that stuff. Yeah...I dabble a bit in the SCA (Society for Creative Anachcronism), so I had some armor made for their "combat." It's more stick fighting than actual sword fighting, but it's fun. They use rattan clubs for most of the weapons, and believe me—armor or not— it can hurt.

BJ: How do these two separate hobbies combine? They have a certain similarity in theme, so how do they work together?
JB: Remember—first set was Castle. Having real armor and weapons based on historic pieces, helps without a doubt. Knowing how certain things work and function in the real world, lends to better ideas and designs.

BJ: What has been the most gratifying thing you have gotten from your work?
JB: "Most?"...can't say. I get emails and letters from people all the time, thanking me for doing what I do and complimenting the parts. Let me just say this—it's most rewarding when I see that little kid's eyes light up when he sees the Stormtrooper blaster for the first time.

BJ: Any funny stories?
JB: Oh...I think I have a few stories, but I'm not sure they're really "funny." Most of my stories would pertain to the trials and tribulations of doing what I do. I guess the funny stuff would be the amount of suggestions I get from various people, wanting me to produce the most obscure things. For instance—"I wish you'd make a Kaminoan saber-dart?" While I can appreciate the desire for various items, I have to laugh a little when I get those requests.

BJ: And what is in store for the Little Armory?
JB: Several things will be touched on in the future. Some will entice those who have bugged me (in a good way) from day one, wanting certain themed items. Others will most certainly shock and dismay most of the community. I'll be heading in a completely different direction for most people, I think. The way I see it though—change, and new things are good. It's the only way we can grow.

A Look Inside…

rtlToronto

A Group for Lego Enthusiasts in the Greater Toronto and Southern Ontario Area

Article and Photos by Calum Tsang

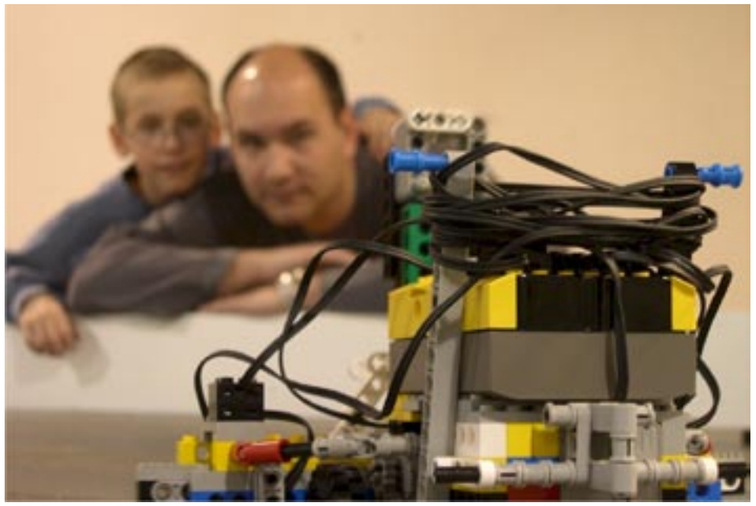
rtlToronto marks its eighth year this summer, a largely irrelevant but active group of enthusiasts based in the area surrounding Toronto, Canada. Almost exclusively focused on LEGO robotics, the group holds regular design competitions to inspire builders to create robots that can perform a task.

About eight years ago, Chris Magno and I decided to throw an "event" at the local campus theatre where he worked. It wasn't our intention to start a large operation, but just to bring a couple of fans together. A few years before, we met over the Internet like many others on rec.toys.LEGO, the Usenet newsgroup, and for this event we invited the world via a public newspost. We weren't really sure who would show up.

Mike Purvis tunes his Connect Four playing artificial intelligence driven machine.

On an empty stage with nothing but a wash of theatre lighting on us, we sat playing show and tell with stuff we had built: Electric trains, walking robots that used pneumatics, and experiments employing "muscle wire" with Technic armatures. Three people, plus a curious passerby who had seen our handwritten sign outside on the sidewalk, came by. Still, we thought it was fantastic that at least four people out of the four million people of Toronto liked LEGO enough to spend a few hours talking about the construction toy.

A year later, Mindstorms came out, and both of us bought a kit. My enthusiasm for this product was completely deflated about an hour into playing with it, when I realized it was incredibly boring on its own. Part of it was my own laziness: I'd think of a neat use for it (say, a roving garbage collector), then, realizing it was hard to accomplish, pare down the requirements until I was left with the same basic model (two wheeled roving tank) the kit started you with. It would be great to if all of us had a common goal, so we could at least help each other with solving the little challenges that came up.



Rob Antonishen and son watch their robot drive along the playfield collecting blocks.

Aided by Jeff Elliott, another Torontonian, we devised a simple game, collecting and sorting marbles, and invited people to build a robot to compete in a first ever Toronto Mindstorms challenge. Chris outlined some basic tenets: You had to physically come out to play the game, so it required you to meet everyone; two robots played at once, giving the added amusement of machines smashing into each other; and, you had to build it all out of LEGO, to keep the game fair.

Again, attendance was slim: Four people brought sorting robots. But you could tell there was interest from the thirty people showing up just to watch. Everyone agreed we wanted to do it again soon and you could observe the gears starting to crank above each person's head, thinking about how they would solve the marble sorting problem themselves or what other games they wanted to attempt.

Surprisingly, that's not far from where we are today: rtlToronto, still run by the two of us, is basically a group of enthusiasts who build robots to compete in self-organized competitions held every few months. The contests have grown in scope from simple sumo and sorting games to playing autonomous games of Connect Four, traversing monkey bars and climbing vertical ropes.

Part of the success of rtlToronto is what business students might refer to as a "focused competency model" but it's probably easier to say "we don't do anything but stuff we like," which basically means it's "robotics only." As a group, we spent many of the early days trying to be everything to everyone, which clearly didn't work. Neither Chris nor I were friendly or supportive enough to care about anything but robots. Instead, we decided to pick something we did well and continued to refine that area of interest.

A typical competition begins almost four months out, usually at the dinner following a game day event. Members gather around at a restaurant and pitch game ideas to each other. Often, they're drawn from everyday objects (marbles, blocks, cola cans), television shows such as (Battlebots and Junkyard Wars) or interesting new machines people have heard of. The concepts can vary in scope and complexity, but have to capture the imagination of the rest of the table. Within hours, the game is checked for feasibility, theory and scalability: The design goal must be within the known limits of LEGO, complete in strategy and defined scoring methods, and be interesting enough for beginners and experts, if possible. Usually this process ends with Chris coordinating the table in commentary while I draw sketches on napkins of the game apparatus.

This post-event discussion about the next competition kicks off a fortnight of online debate and revision. rtlToronto makes heavy use of its newsgroup on LUGNET.com, the international meeting place for LEGO fans on the Internet, and the weeks defining a new robot challenge are usually its most active. The discussion threads online also attract competitors from around the region, who chime in with comments, then find themselves building for the event.

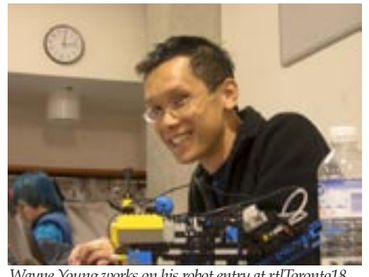
In general, we're pretty good at defining contests and making them work. Half of this is experience, garnered from a team of builders who have a solid understanding of what you can and can't do with LEGO, the other half is a diehard attitude that somehow makes it work regardless of the adversity. Once in a while we completely misjudge the difficulty of a contest. In 2004, we ran a game where robots had to dig out bricks from a pit of uncooked rice. Builders and robots struggled to cope with the finicky bits of rice going everywhere.

Usually a draft ruleset is posted within a few weeks of an idea being decided on. I tend to write the ruleset while on the phone with Chris, taking into account all the discussion on the newsgroup and restaurant meetings. Unlike other robotics organizations, we deliberately try to make the rules as simple as possible. In 1999, while planning for the first game, we immediately started thinking of loopholes competitors might use to their advantage: What if they sparked 48 volts across a pair of train track taps? If you break someone's RCX, should you have to pay for it? What if I design a deliberately malicious robot?

The answer was less legislative than cultural: We figured people did this for personal pride and self interest. If we didn't have a prize to get riled up over, then people wouldn't feel the need to cheat. If someone did, we'd make them feel bad by peer pressure. We termed this a "gentleman's game" and continue to use the phrase "Only blood, sweat and gears" to describe the compensation at the end.

A month out from game day, the rules are frozen after much debate. By this time, members are building at home—designing, testing, and revising their machines. The approaches to robot design are varied: Some take a slow and deliberate approach, akin to Germans in lab coats testing a new BMW at the track, while others take a furious fit of late night hacking the week before. Some involve their kids; others block out the world and toil in the basement alone. The best builders often have the smallest LEGO collections, which results in innovative use of

A robot rushes across the playfield at the Oakwood Village Library in Toronto, Ontario



Wayne Young works on his robot entry at rtlToronto18, a game involving the stacking of miniature blocks.

pieces: A radar dish can be part of a continuously variable transmission, while a half-rounded beam is precisely capped on a chain link to form a conveyor for blocks. The test procedures are also extreme: Some competitors end up building exact replicas of the playfields and game apparatus to practice on or keeping meticulous logs of performance and reliability.

Over the span of four months, Internet banter about the contest tends to grow, and sometimes entrants will bring a small mechanism for demonstration at one of our monthly dinners. Apart from actual competitions, rtlToronto schedules monthly "meetings" at a local restaurant. This is the part of the group you never read about online and has become one of its strongest points. The monthly dinner has grown to be a social event, with little LEGO talk and much more camaraderie.

Game day occurs at a local public library and usually begins with a few of us relocating tables and chairs and unloading and setting up the playfield or installing whatever game equipment is required, such as stringing ropes from the rafters or marking out things on the floor with tape. The day is very informal, as competitors arrive, they grab a free table, figure out where to plug in their laptop and start testing their robot. Usually each builder is surrounded by an entourage of family and friends, who provide emotional encouragement and bring food as their competitor is embroiled in tweaking sensor settings.

One of the most important lessons for people involved in rtlToronto competitions is that the real game environment is never the same as the one used in development. An oft heard phrase is "it worked perfectly at home," grunted when a robot veers off into a wall or chews up gears sputtering around. Perhaps this lesson is a good one for life: Rehearsal isn't the same as opening night.

It's a lesson taken by the variety of characters in the group, mostly technical professionals from software development and engineering backgrounds, but also including a cartoonist, an artist, and a few dedicated teenagers. Everyone brings different perspectives to the game and takes alternate approaches to their mechanical designs, part choices or software techniques.

Shortly after lunch, the actual competition begins. Scores are recorded on an official scrap of chart paper affixed on an easel, and timing is handled by whoever has a watch with a second hand, or if preferred, Casio with a stopwatch button. Judging is done by the crowd, usually led by Chris who asks everyone in the audience if they should let a mistake go or not. The affair is casual, with entrants allowed one "re-do"each event and competitors given the option to scrub a match if both parties think it won't go anywhere. This leads to a very supportive environment.

Hundreds of photos are taken at the event. The sidelines of the playfield look like the camera section at a Best Buy: Everyone has a camera out to snap pictures of their favourite robot entrant. What you don't get from the photos and videos is the humour and silliness from the competition: The crashes and accidents, the silly mistakes, the cheering for the crowd favourites.

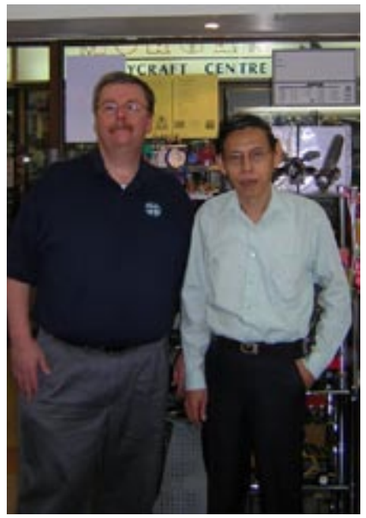
At the end of the day, winners are announced, but the take away is a clichéd after school special message. Everyone wins because everyone tried. Each builder takes away new learnings about developing systems, and every audience member hopefully gets a little inspiration.

rtlToronto now begins its eighth year in operation, having finished its sixteenth competition recently. Like any other enthusiast group, it will continue to evolve and grow. New competition ideas are proposed. Some builders leave due to family or career requirements, while new builders come on, eager to try their hand at building robots out of plastic blocks. We've also grown in our experience in leading a group: While the two of us continue to organize events and steer our direction, our members take the lead in forming games, pushing the group forward and making the group work.

Calum Tsang runs rtlToronto in between working on his M.Eng degree inIndustrial Engineering and at a Canadian telecom provider as a systems engineer..

SingLUG (Singapore LEGO User's Group)

by Larry Pieniazek



Singapore? Where's that? And why a LEGO user group? S'pore (the favoured contraction) is 1 degree N of the equator, between Malaysia and Indonesia, near the Straits of Malacca, and it is very hot. It strikes you whenever you go outside. It is difficult to internalize in advance how hot it is. When people say "tropical" this is what they mean.

I got a chance to see this island city state, home of the highest per capita GNP in South Asia, in February of this year when my work took me there for a month.

When I learned that I was going, I contacted Dr. C S Soh, a longtime correspondent, who many of you know as the "wizard of pneumatics" (his site http://www.fifth-r.com/cssoh1/contents.htm is quite well known in LEGO pneumatic circles), to let him know I was coming. He let me know about the nascent club, SingLUG and its meetup.com base: http://afol.meetup.com/28/events/ (now relocating to a Yahoogroup) http://asia.groups.yahoo.com/group/singlug/?yguid=173000976 since Meetup decided to start charging. Intrigued, I made arrangements to visit and a meeting was spawned "just for me" as it were, the first Sunday I was in Singapore.

Singapore is noted for the wide variety of different sorts of shops, from ultraswank multistory malls on Orchard Road, to tiny godowns in various neighborhoods. One common sort of shop is that found in many smaller "neighborhood" malls, a small rented space, usually run by a budding entrepreneur, and featuring almost anything.

Dr. Soh has a shop in Katong Shopping Center, one of these neighborhood malls, and that's where all the SingLUG meetings so far have been.

Why does Dr. Soh have a shop? You could say it's a one man crusade. After retiring from government service, and becoming somewhat worried about Singapore's educational system and the decline in interest in engineering and technical fields among young students, Dr. Soh decided to do something about it. His answer? Offer classes in simple machines, mechanics, robotic and other interesting fields to young kids and get them interested early. He has been doing this with some success for several years. So his shop is chockablock with supplies, Dacta sets, reference materials and displayed creations of his own and of his students.

So it's a great location for meetings! No worries about having to tear down when you're done, and there's LEGO stuff everywhere. And in fact we had a pretty good turnout, with a nice mix of students about to enter college or National Service, a technical worker, and an Austrailan expat (his dad flies for SIA[Singapore Airlines]) and his mom. I showed them some scenes from other clubs, presentations that had been given at BrickFest and talked organization. In fact, we did this every weekend for three weekends in a row. I was sure they'd be tired of hearing me drone on by the time the third weekend rolled around but they wanted to learn as much as they could about how to get organizations going.

Turns out they're not as far along as they'd like to be, and we dug into why. LEGO is quite expensive in Singapore. A set like Knight's Bus which we pay 30 USD MSRP costs a lot more. At TRU that set might be up to 80 Sing (Singapore Dollars) or about 50 USD. So that's one strike. Another factor holding them back is that Singaporeans don't seem to have as many public shows (train shows, museum shows and the like), which US clubs have discovered are a great way to bring new members out of the woodwork.

The club is off to a good start though, and they're actively seeking to find venues to exhibit. Expect to hear great things from SingLUG (and Dr. Soh's education programs) in the future.

That's it for this issue. Next issue will feature a profile of another club.

Larry Pieniazek is a Solution Architect with IBM in Michigan and has been active with the LEGO community since 1997. In that time he has been involved in WAY too many things to list in one paragraph. If you really want to see all the gory detail, go here (http://www.brickfest.com/staffbios.php#larry) and read it all for yourself (realising that it's already out of date since Larry has gotten involved in new stuff just since it was written) but it's pretty boring, really, and way too long for any normal person to read. He likes trains, town, space, castle, sculpture, mosaics, pirates, technic,buying and selling, designing custom kits, community events, websites, LDraw, other LEGO related software, conventions and gaming.

Six Years and Still Building!

by Joe Meno
Photos by Joe Meno and Geoff Gray

Every year there is an event that LEGO® builders anticipate: BrickFest! Started in 2000 in Washington, DC, the convention has grown to become an internationally recognized LEGO fan convention, as well as being the largest convention of its kind in North America. Hundreds of LEGO enthusiasts converge on George Mason University's Arlington Campus to take part in this event, and hundreds more attend the Public Expo Day to see all the creations displayed.

2005 is a noteworthy year because many of the LEGO Group's senior management will be visiting this convention for the first time. The keynote speaker for BrickFest will be Jørgen Vig Knudstrup, Chief Executive Officer of LEGO, and the owner of the LEGO Group, Kjeld Kirk Kristiansen, will also be paying a visit to the convention, as well as Per Hjuler, Head of the Product Design Team. Other members of the Product Design and Marketing Teams also will be in attendance, so the LEGO Group will have a major presence at BrickFest.

BrickFest 2005 will be the most exciting convention yet, with displays in Space, Mecha, SciFi, Micro, Vignette, MINDSTORMS® , Technic, Castle, Bionicle, Mosaic, Sculpture, Town and Train.

A new display will be a 'dark room,' where blacklights will be used to illuminate neon-colored models, and a new theme making its debut is the Vignette theme, which is based on a complete scene depicted on a small baseplate.

On the other extreme, this year will mark the first appearance of the Great Ball Contraption (GBC), a building standard designed by MINDSTORMS and Technic builders. The GBC is a LEGO version of a Rube Goldberg machine, where LEGO soccer balls and basketballs move through a sequence of processes, including pneumatic scoops to conveyor belts to other more whimsical methods...all built in LEGO elements. BrickFest's GBC will also be used to attempt a world record for largest Rube Goldberg Machine, with a goal of over 140 sequences to be linked together for the attempt.

(continued on next page)

Size will also play a major part in the Space display, with a layout composed of Moonbase Modules made by builders from across the country and beyond. Not to be outdone, there will be a Train layout composed of buildings and trains from national and international LEGO train clubs! Castle will also have a large layout area using the Classic Castle Standard to make a castle and the surrounding landscape.

Size isn't everything, though. There will be a Microscale room, as well as a Vignette area, where the models are smaller, and in a way, more challenging in terms of building than the general minifigure scale. There also will be whimsical sculptures and impressive mosaics.

BrickFest also has competitions in almost all themes, from MINDSTORMS challenges to microscale contests. In the Castle theme, there will be an Evil Engine contest, where builders will bring and demonstrate working catapults and siege weapons. In the Space theme, there will be contests for the best Moonbase Module and best spacecraft. There's also going to be an animation festival and competition where the best films will be compiled to a commemorative DVD.

The LEGO Group will celebrate the 50th anniversary of their System of Play by holding a competition sponsored in part by the National Trust and Historic Preservation. Builders will be bringing models that represent historic sites and historic building styles, with a grand prize of a weekend stay at one of the National Trust's hotels, $500 cash, and the title of "Grand Preservationist." Winning entries will also be displayed at the National Trust location they modeled after BrickFest.

BrickFest has seminars and presentations about various aspects of LEGO building and collecting by many of the best LEGO enthusiasts worldwide.

But through all the competition and presentations, the most important thing about BrickFest is that it's the largest meeting of adult LEGO builders in the country, and for new attendees, it's an opportunity to meet the community. Many people meet at the convention for the first time in person after meeting online through LUGNET or other LEGO websites. Furthermore, BrickFest has always been a place of inspiration: for attendees to start clubs, for others to start community projects, and still others to build in different directions. And that inspiration comes from all the people who attend.

BrickJournal will be a part of BrickFest 2005, with coverage of the events and the people behind BrickFest, from the opening to the closing ceremonies. We also invite you to attend this convention, and see and meet the LEGO building community first-hand!

BrickFest takes place August 12-14 at GMU, and is $60 for the three-day event. Public Expo Day is August 14, with $7 admission. For more information, you can go to www.brickfest.com.

Community: BrickFest™ History

BrickFest was an idea spurred on by the MIT MindFest event in 1999, and was one of the first opportunities for many members of the adult fan community to gather, share their ideas and their enthusiasm for the creative LEGO toys. BrickFest is the first large LEGO event in North America for the adult LEGO fan community held by the LEGO community.

BrickFest 2000

took place at George Mason University's Arlington Campus in Virginia.

Attendance: 60 people

Highlights:
- Large Classic Castle display
- Large pile of brick on the floor where everyone crowded around and built!

Attendance: over 150

Highlights:
- 600 square foot train display
- Lindsay Frederick Braun's battleship, several feet in length
- Castle room
- Minifigure gathering

Attendance: 200

Highlights:
- Formation of the Moonbase Standard by space builders
- Lindsay Frederick Braun's battleship, the Takau, with a length of over 7 feet
- Beginning of the Brick Bazaar, an informal LEGO marketplace
- Star Wars battle of Hoth minifig scale diorama, built by David Eaton and Shaun Sullivan

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Attendance: 240

Highlights:
- BrickFest's first public expo, with 380 general admission
- Presentations by the First LEGO League
- Train layout over 90 feet long
- New LEGO releases presented
- First Moonbase layout
- Formation of Classic Castle Standard
- Coverage by CNN and *The Washington Post*, NPR, and local news media

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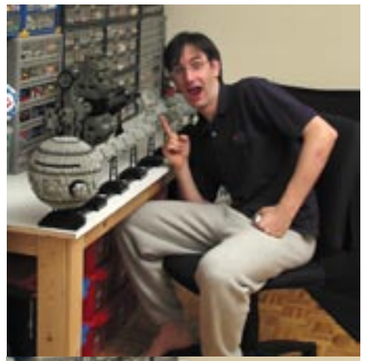
Attendance: 150

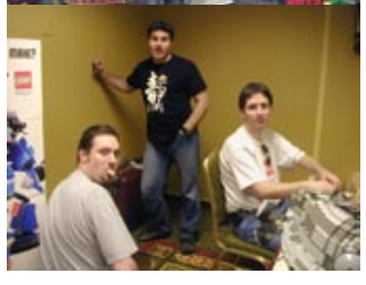
Highlights:
- First BrickFest held outside of Washington, DC
- Presentation of a LEGO rollercoaster built by Matthew Chiles
- Presentation by The LEGO Group about community efforts
- Public Expo

Attendance: 285

Highlights:
- Public Expo, with 1200 general admission
- First presentation of the Micro theme, with a room of models from builders around the world
- New LEGO releases and programs presented:
  BNSF train engine
  LEGO Star Wars computer game
- Coverage by international media

Last Word





Well, this is it—how do you like it?

I hope that you enjoyed reading all the articles and maybe learned something. I certainly did, such as: NEVER wait until deadline to start working on the Last Word!

Seriously, I decided to make this page a little looser than the rest of *BrickJournal*, because while I tried to make this as professional as possible, one of the greatest traits of the Adult Fans of LEGO is a sense of humor. My feeling is that a builder has to have one, especially if one of their prized models falls from a shelf! I have had that happen so much it's now become a part of my routine at displays—show up, display, then drop my models (in a box) afterwards. I would like to say I do that so I have to build new things, but it's more accurately because I'm a little clumsy.

Jason Allemann (left) had a little fun while photographing his model. And so did the attendees of House of Bricks, like Adrian Drake (lower left) and Felix Greco and Duane Hess (even lower left). There's an inspired bit of lunacy that is shared by AFOLs, and it's refreshing to me to see it and remind me that life is only as serious as I make it.

And another reminder is a picture (below) I took while I was supposed to be reviewing a set. I was busy building away, and having fun with the set when I had to leave for a moment. My niece saw the bricks and plates and started building. Since she wasn't yet 2 years old, her building consisted of moving all the sorted bricks from the little boxes to the really big box that was actually the house model.

No, I didn't finish the review that I planned. But I got much more. I got some smiles.

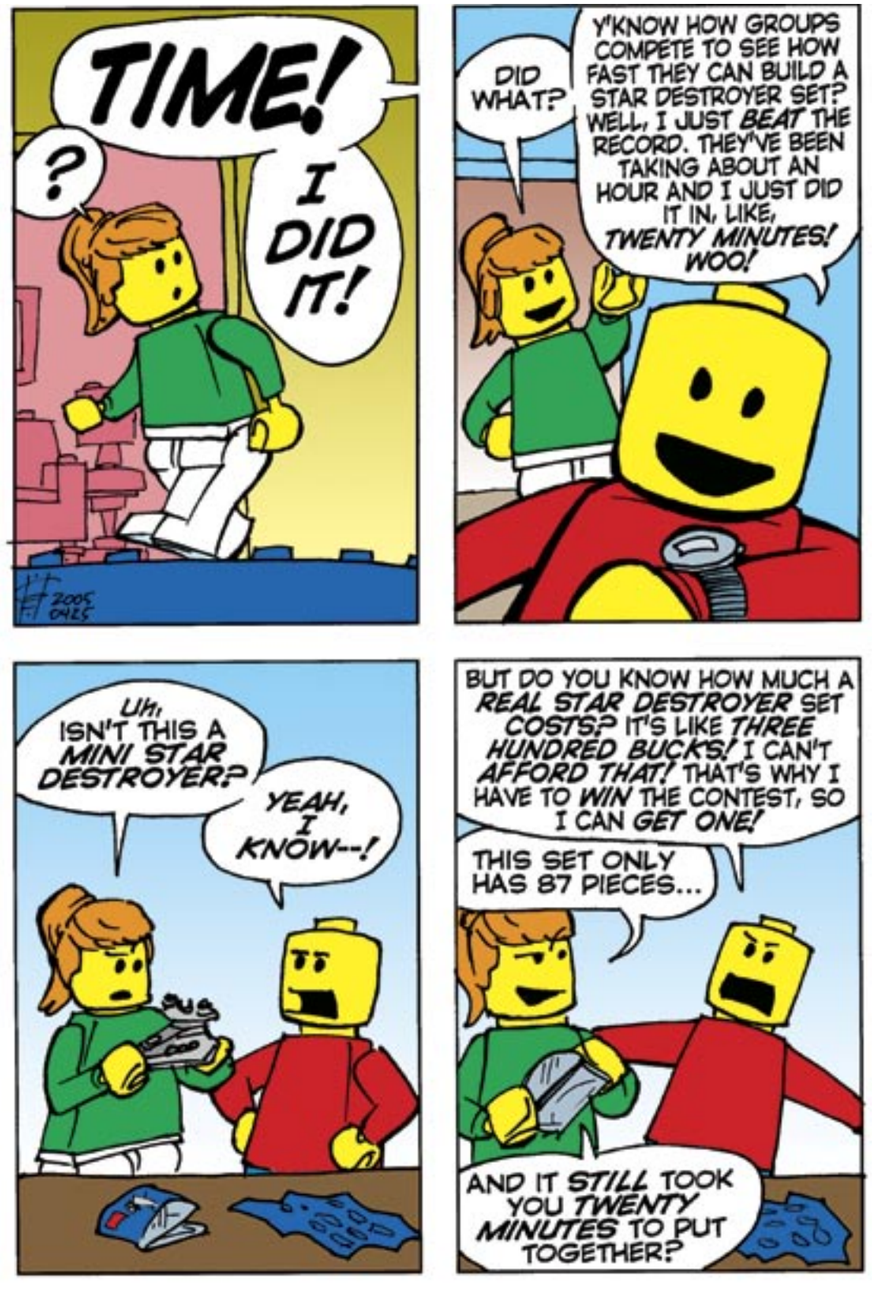
I hope that this issue did the same for you.

See you in 3 months with BrickFest coverage, more articles, and more fun!

Joe

PS: Thanks to everyone who helped out including those who provided support in the background - like Christina Hitchcock and Suz Green and Cary Clark and Mike Walsh and all the gang at NCLUG and WAMALUG!

AFOLs
by Greg Hyland



Coming in August!

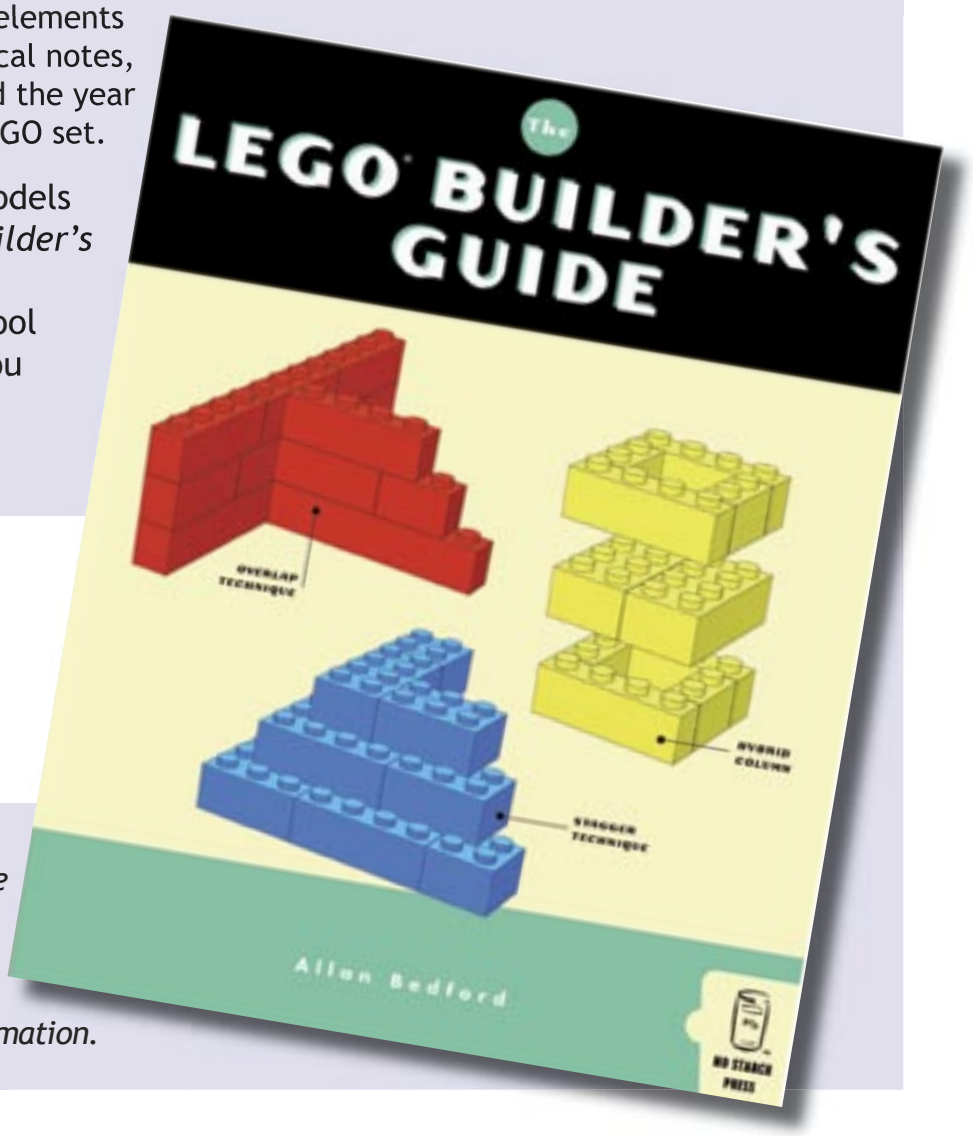
Build A Firm Foundation for Your LEGO® Hobby!

Have you ever wondered about the basics (and the not-so basics) of LEGO building? What exactly is a slope? What's the difference between a tile and a plate? Why is it bad to simply stack bricks in columns to make a wall? *The LEGO Builder's Guide* is here to answer your questions. You'll learn:

- The best ways to connect bricks and creative uses for those patterns
- Tricks for calculating and using scale (it's not as hard as you think)
- The step-by-step plans to create a train station on the scale of LEGO people (aka minifigs)
- How to build spheres, jumbo-sized LEGO bricks, micro-scaled models, and a mini space shuttle
- Tips for sorting and storing all of your LEGO pieces

The LEGO Builder's Guide also includes the Brickopedia, a visual guide to more than 250 of the most useful and reusable elements of the LEGO system, with historical notes, common uses, part numbers, and the year each piece first appeared in a LEGO set.

Focusing on building actual models with real bricks, *The LEGO Builder's Guide* comes with complete instructions to build several cool models but also encourages you to use your imagination to build fantastic creations!



The LEGO Builder's Guide
by Allan Bedford
No Starch Press
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Available in bookstores everywhere or directly from the publisher at www.nostarch.com. Visit the author's website at www.apotome.com for more information.