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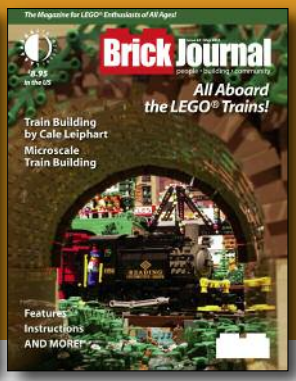

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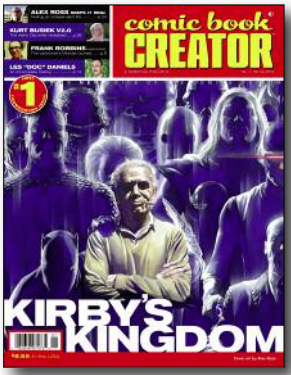

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Former **COMIC BOOK ARTIST** editor **JON B. COOKE** returns to TwoMorrows with his new magazine! #1 features: An investigation of the treatment **JACK KIRBY** endured throughout his career, **ALEX ROSS** and **KURT BUSIEK** interviews, **FRANK ROBBINS** spotlight, remembering **LES DANIELS, WILL EISNER's** Valentines to his beloved, a talk between **NEAL ADAMS** and **DENNIS O'NEIL**, new **ALEX ROSS** cover, and more!

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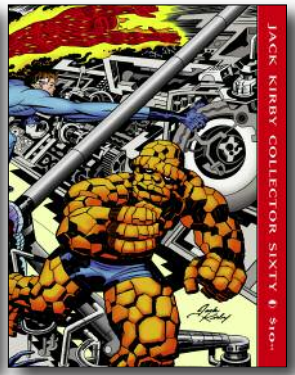

KIRBY COLLECTOR #60

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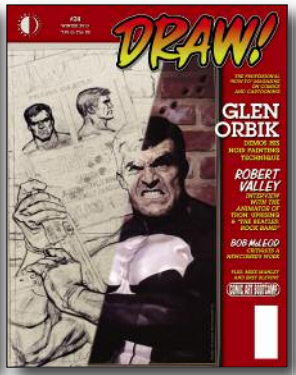

DRAW! #24

GLEN ORBIK demos how he creates his painted noir paperback and comic covers, **ROBERT VALLEY** discusses animating "The Beatles: Rock Band" music video and Tron: Uprising, plus Comic Art Bootcamp on "Dramatic Lighting" with **MIKE MANLEY** and **BRET BLEVINS**, Crusty Critic **JAMAR NICHOLAS** reviews art supplies, **BOB McCLOUD** gives a Rough Critique of a newcomer's work, and more!

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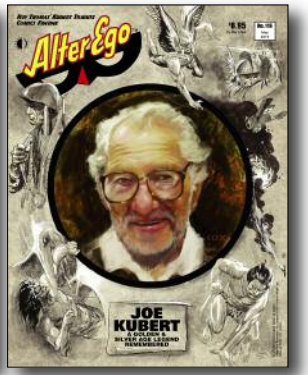

ALTER EGO #116

JOE KUBERT TRIBUTE! Four Kubert interviews, art by **RUSS HEATH, NEAL ADAMS, MURPHY ANDERSON, SHELDON MOLDOFF, IRV NOVICK,** and others, **MR. MONSTER'S COMIC CRYPT, BILL SCHELLY**'s Comic Fandom Archive, FCA's Captain Video conclusion by **GEORGE EVANS** that inspired Avengers foe Ultron, cover by **KUBERT,** with a portrait by **DANIEL JAMES COX!**

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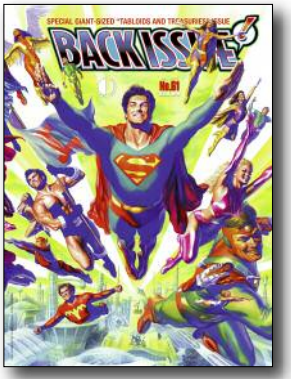

BACK ISSUE #61

"Tabloids and Treasuries," spotlighting every all-new tabloid from the 1970s. Superman vs. the Amazing Spider-Man, The Bible, Captain America's Bicentennial Battles, The Wizard of Oz, even the **PAUL DINI/ALEX ROSS** World's Greatest Super-Heroes editions! Commentary and art by **ADAMS, GARCIA-LOPEZ, GRELL, KIRBY, KUBERT, MAYER, ROMITA SR., TOTH,** and more. Wraparound cover by **ALEX ROSS!**

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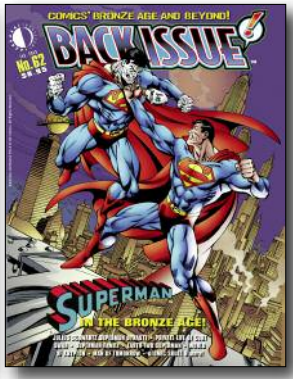

BACK ISSUE #62

"Superman in the Bronze Age"! **JULIUS SCHWARTZ, CURT SWAN,** Superman Family, World of Krypton miniseries, and **ALAN MOORE**'s "Whatever Happened to the Man of Tomorrow?", art & comments by **ADAMS, ANDERSON, CARDY, CHAYKIN, PAUL KUPPERBERG, OKSNER, O'NEIL, PASKO, ROZAKIS, SAVIUK,** and more. Cover by **GARCÍA-LÓPEZ** and **SCOTT WILLIAMS!** Edited by **MICHAEL EURY**.

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"British Invasion" issue! History of Marvel UK, Beatles in comics, DC's '80s British talent pool, V for Vendetta, Excalibur, Marshal Law, Doctor Who, "Pro2Pro" interview with **PETER MILLIGAN** & **BRENDAN McCARTHY,** plus **BERGER, BOLLAND, DAVIS, GIBBONS, STAN LEE, LLOYD, MOORE, DEZ SKINN,** and others. Fold-out triptych cover by **RON WILSON** and **DAVE HUNT** of Marvel UK's rare 1970s "Quadra-Poster"!

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BACK ISSUE #64

"Bronze Age Backup Series"! Green Lantern, Green Arrow, Black Canary, Metamorpho, **GOODWIN** and **SIMONSON**'s Manhunter, **PASKO** and **GIFFEN**'s Dr. Fate, "Whatever Happened To…?", Nemesis, Rose and the Thorn, Seven Soldiers of Victory, art and commentary by **CARY BURKETT, JOHN CALNAN, DICK GIORDANO, MIKE GRELL, ELLIOT S! MAGGIN, DAN SPIEGLE,** cover by **GRELL** and **JOE RUBINSTEIN.**

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BACK ISSUE #65

"Bronze Age B-Teams"! Defenders issue-by-issue overview, Champions, Guardians of the Galaxy, Inhumans, **PETER DAVID**'s X-Factor, Teen Titans West, Legion of Substitute Heroes, an all-star chatfest of Doom Patrol interviews, plus art and commentary by **ROSS ANDRU, SAL BUSCEMA, KEITH GIFFEN, TONY ISABELLA, PAUL KUPPERBERG, ERIK LARSEN, GEORGE PÉREZ, BOB ROZAKIS,** cover by **KEVIN NOWLAN.**

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Many thanks to the websites who have served as mirrors for *BrickJournal*:
www.LUGNET.com, www.Brickshelf.com, www.peeron.com, www.brickmodder.net www.rustyclank.com

About the Cover:
The Purple Piranha takes flight!
Photo by Cole Martin, art by Joe Meno.

About the Contents:
A close-up of Jon Hall's D-74 Partisan.
Photo by Jon Hall.

From the Editor:

Well, this was supposed to be about planes, but I got sidetracked by Sky-Fi. What is that? You'll find out in this issue.

You'll also find out about an AFOL who builds from real spacecraft – he even gave us a model to build!

You'll also find out about how to build a Sky-Fi miniplane, thanks to an AFOL builder who has only recently started to make himself known.

And you'll find out about more builders, an event in Norway, the LEGO Airport (!) and... the Batcave! (Well, one Batcave, anyways.)

With all of this you would think that I would be getting tired of looking at models and going to events.

You would be wrong. *BrickJournal* is heading into its *fifth* year of publication, and there is so much more to find and explore in the LEGO community. I'm not tired of the community, but I do get tired trying to cover it!

So while you read this issue, I think I'll take a nap... or two.

Joe Meno, Editor

P.S. Have ideas or comments? Drop me a line at *admin@brickjournal.com*. I'm open to suggestions and comments and will do my best to reply.

P.P.S... Yes, *BrickJournal* has a website — *www.brickjournal.com*! Twitter? Yep, there too — http://twitter.com/brickjournal. Facebook? Yup — http://www.facebook.com/group.php?gid=58728699914&ref=mf. Or you can scan the bottom codes with a QR reader!

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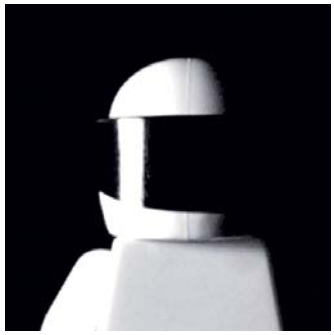
Glossary

AFOL (Adult Fan of LEGO)
NLSO (Non-LEGO Significant Other)
MOC (My Own Creation)
TLG (The LEGO Group)
BURP (Big Ugly Rock Piece)
LURP (Little Ugly Rock Piece)
POOP (Pieces – that can be or should be made – Of Other Pieces)
SNOT (Studs Not on Top)
LUG (LEGO Users Group)
LTC (LEGO Train Club)

BrickJournal *and its staff would like to thank the LDraw community for the software it makes available to the community, which we use for making all of the instructions and renderings in this magazine. We would especially like to thank Kevin Clague for his continued upgrades of the LPub tool that is a part of the LDraw suite. For more information, please visit http://www.ldraw.org.*

Are J. Heiseldal: the LEGO Builder Behind the Brick!



Article by: Megan Rothrock
Photography by: Are J. Heiseldal

You might have seen his cool car MOCs on flickr, where he is known as L@go; and though he may be new on the AFOL LEGO Event scene, this talented builder is full of surprises.

***BrickJournal:* Can you tell us a bit about yourself and where you come from?**
Are J. Heiseldal: I'm 35 years old and come from the southernmost part of Norway. Currently I live in Bergen on the Western coast, where I work as a sports reporter for Norwegian TV 2. My main interests, apart from building, are music and cars, particularly Italian ones. I currently own my fifth one, a typically unreliable but utterly gorgeous Alfa Romeo.

***BrickJournal:* What MOCs or themes do you like to build?**
Are: I'm a town builder, and my main focus is cars, which comes quite natural to me since I've been a huge car nut since I was a kid. At the moment I'm very much into hot rods and vintage cars. My main rule is that the cars I build must fit in, scale-wise, with LEGO's current offerings, and that they must be able to seat a minifig. A special pet project of mine is updating old sets that I grew up with, to modern LEGO standard, and some of those have turned out very well.

In addition to that I've built a few modulars, and I enjoy that, but they're so parts exhaustive – especially because I just can't seem to be able to build buildings without interiors. It's an expensive mental block… but the interiors are also my favorite parts of my modular buildings.

Are describes his car: "My lovely '00 Alfa 156 2.5 V6. Not the most reliable of cars, but it's beautiful and sounds like nothing else."

***BrickJournal:* How often do you build?**
Are: It depends on how much spare time I've got on my hands. Lately I've been building more than usual. But as I don't have a huge collection of bricks I design all my MOCs digitally first, using MLCad, before ordering the bricks I need. That's another expensive habit that I need to get rid of sooner or later – I'm working on expanding my parts collection!

Are says, "My minifig-scale version of the classic Model Team set #5541. The proportions are a bit off, because I wanted it to have eight cylinders, and that meant the engine needed to be four studs long. But I think it works as an interpretation."

Mail Truck *(1982)*

Are's pet project: updating the old classic sets to the modern LEGO City style. He strives to keep as many of the details as possible. All are decorated with original LEGO stickers, some of them 30 years old.

Highway Maintenance Truck *(1982)*

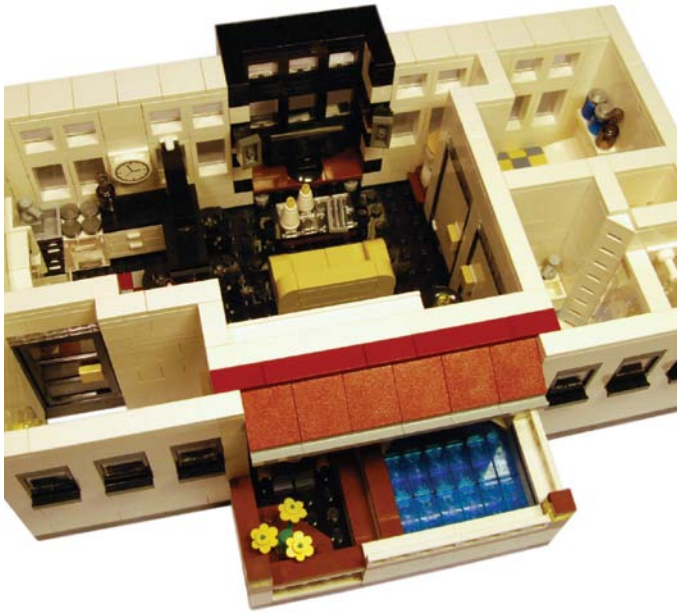
***BrickJournal:* When did you come out of your 'Dark Ages?' Was there a particular LEGO set that inspired you to get building as an adult?**
Are: Yes. In 2008 I discovered the Café Corner and instantly fell in love. The timing was perfect, because it hadn't yet been discontinued, so I was able to get it at close to retail price – and got hooked. Next I got the Market Street and the Green Grocer… and after that it all went a bit crazy. I'm much more focused now. I'll keep collecting the modulars, because they're like the ultimate evolution of the classic Town sets that I grew up with – although the Statue of Liberty is probably the set I'm most happy with owning. It sits proudly on a pedestal in my living room.

Stock Car *(1986)*

***BrickJournal:* If you could design any new LEGO elements what would they be?**
Are: As a car builder, I'd certainly like another mud-guard design or two, and perhaps a new version of the hinged 1x4 windscreen. Those two shortcomings have actually – dare I say it – caused me to bring out my knife a couple of times... I'd also love some more curved inverted slopes, not to mention a larger parts selection in colors like dark red, dark green and dark blue.

BrickJournal: Are you a member of any LUGs?
Are: Yes, I'm a member of the Norwegian LUG Brikke-lauget, and met them for the first time at the LEGO Fan Weekend in Skærbæk this autumn.

This is Are's latest modular building, built for the Modular Madness contest on Eurobricks. It features a lamp shop and a café, the office of an architecture company, and a bachelor pad – which contains his favorite part of the build: the outdoor jacuzzi on the top floor.



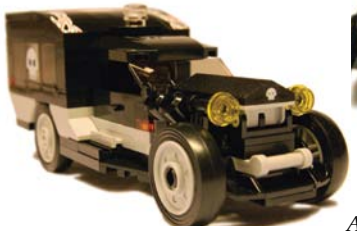
***BrickJournal:* We have heard that you are a Featured Builder in *The LEGO Adventure Book*; how was it to work on that project?**

Are: It was a great experience. The process was interesting, making the model breakdown and following the progress on the page layouts, but then there was a vacuum while the book was being made ready for print. And then it was suddenly finished – and real! And something that I had built was in a book. That was an amazing feeling and actually made me 'come out' to my friends as a LEGO builder. It felt like I'd needed an extra push to justify my geeky hobby, and that was just what I got with the book.

Are says: "This is how my pages in the LEGO Adventure Book *turned out! Below is one of my more modern-looking and compact hot rods, called Gone Overboard."*

You can see more of Are's MOCs here: *http://www.flickr.com/photos/legolago/* or scan in the QR code at the left!

Are states: "I wanted to build a ride for my s(t)igfig, and ended up with this red and black supercar – which got blogged by The Brothers Brick! Some say he's Darth Vader's cousin, and that his skeleton is made of Technic parts. All we know is..."

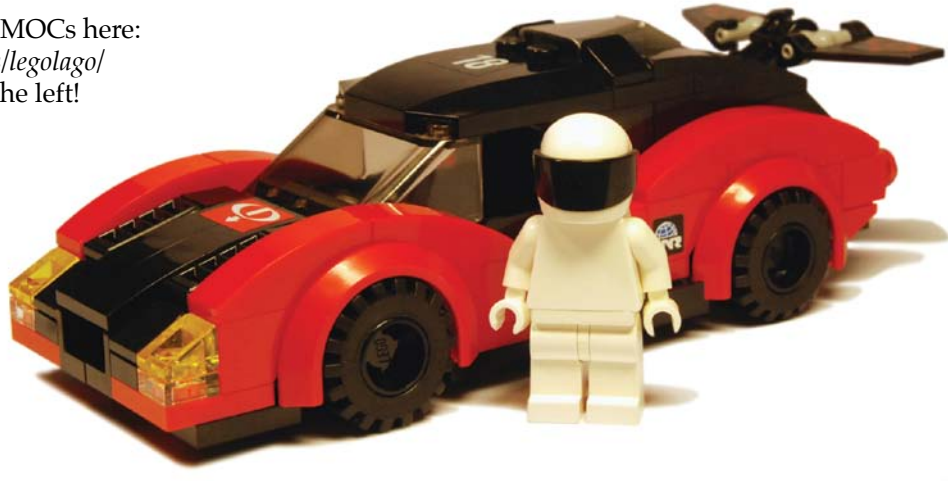


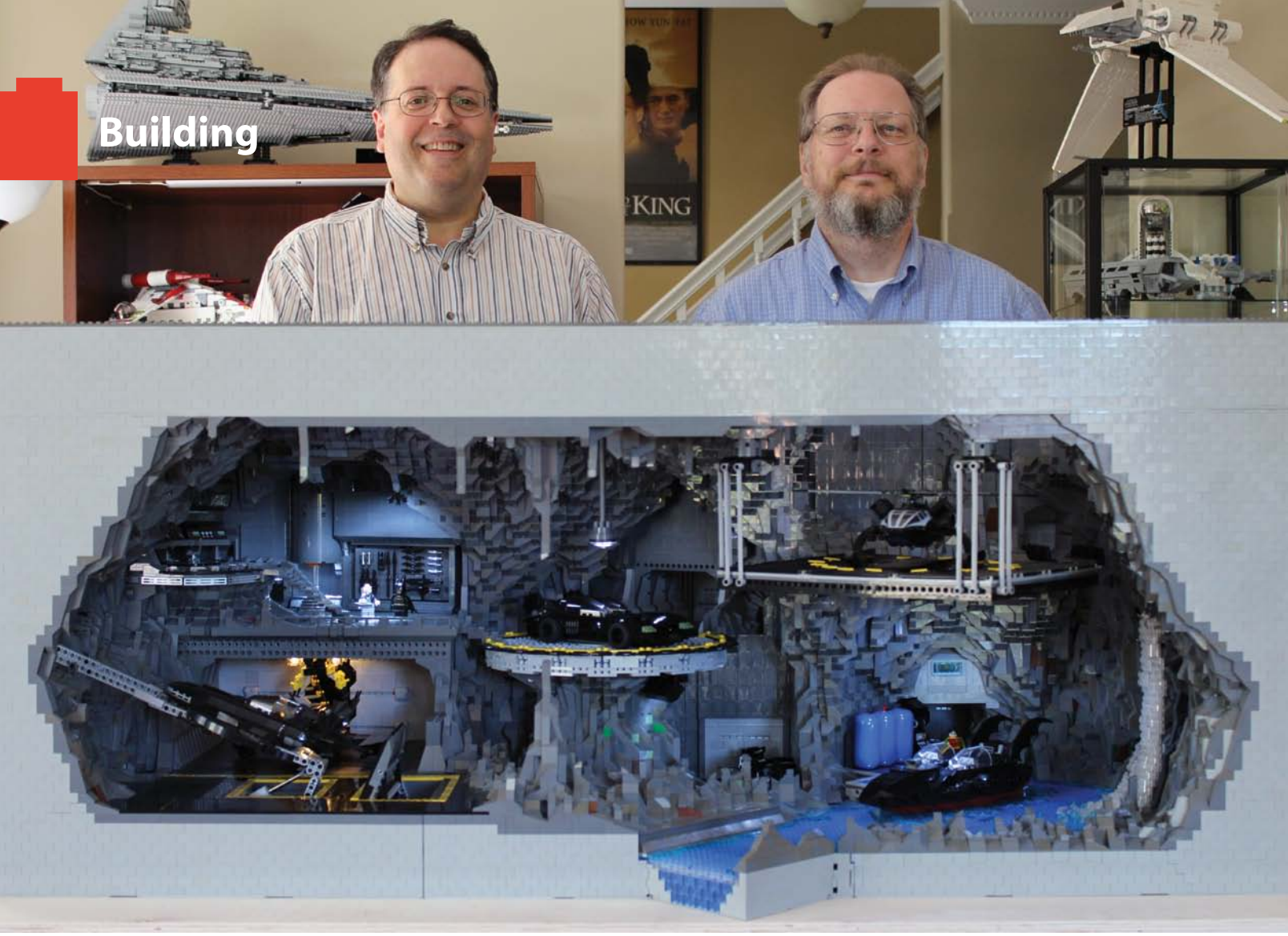
Are talks about the models shown here: "The hearse (above) started out as a hot rod-style van, but evolved into a very strange thing called the Afterlife Express. These guys are guaranteed to transport you into eternity with style.

The boat-tailed speedster (below) is a result of experimenting with LEGO's limited selection of dark blue bricks. Very happy with that one."

***BrickJournal:* Is there anything else you would like to share with our readers?**

Are: Well, it's a great honour to be featured on these pages, just like it was to be featured in the *LEGO Adventure Book*. I'm still relatively inexperienced as a builder and there are people out there that build some amazing stuff, so being allowed to share my creations like this is a privilege. And if somebody can get inspired by what I've built, I'd be very happy!





Above: Carlyle (left) and Wayne Hussey (right), the creators of the Batcave.

To the Batcave!

Article and Photography by Carlyle Livingston II

Hi! I'm Carlyle Livingston.

LEGO building can be, and often is, a solitary endeavor. Building the Batcave with Wayne Hussey has shown both of us what can be achieved if you work together towards one goal. We discovered that by combining our knowledge and talents we were able to create a Batcave that is far better than either of us would have accomplished on our own.

Design

We had been kicking around the idea of starting a project together for some time, so when we found out that SEALUG had the opportunity of putting a LEGO display at Emerald City Comicon (ECCC), we began discussing what we would like to build. Wayne suggested a Batcave and I quickly agreed.

The first thing we did was discuss what would be in this Batcave. Well, you must have the Batmobile, of course, and a Control Room is certainly needed, and a Batplane seemed like a good idea. So Wayne built a mock-up of our Batcave with LEGO in a microscale size.

Below: Wayne's scale maquette of the Batcave.

When you look at that quick and simple maquette that Wayne threw together, it's interesting to see how close we stayed to the original vision overall, yet how the additions we made along the way added so much to the final result. We wanted to create our own interpretation of the Batcave, so we drew our inspiration from elements of the different movie and TV versions we both liked best.

Constructing and a Little Designing

While Wayne worked on the mock-up of the cave, I began work on the vehicles. We started with the Batmobile in the LEGO set "The Batmobile and the Two-Face Chase" #6864. I am a big fan of the 1960s Batman show. I grew up with it. So the George Barris version of the Batmobile is something that influenced me as I got started on our version. You'll notice the dual canopy cockpit is an obvious homage.

Carlyle's Batmobile…

I then built the Batplane. I developed this from images I saw online by The Shadow. (*http://legionsofgotham.proboards.com/index.cgi?board=legos&action=print&thread=5168* and here *http://www.mocpages.com/home.php/3062*) I really liked what he had done so I made some slight modifications to the design and came up with our version. My thanks to The Shadow for his excellent concept!

Batwing…

Next I tackled the Batboat. Again, I was influenced by the Batboat from the 1960s Batman Movie. The dual canopies are again an homage to that classic design. Then I made the Batcopter and this one was completely from my own twisted imagination.

and Batcopter.

Batboat…

Once I had completed all of the basic design on the vehicles, Wayne and I worked together to finish them off and clean up anything that was a problem structurally, or any pieces I was missing in a certain color from my collection. As you can see in the pictures taken during construction, Wayne has a pretty good-sized collection of LEGO and he was able to fix most of the missing pieces in my design. He is also very good at taking a design and cleaning it up in a way that makes it structurally improved and a more efficient use of parts.

Building a Cave

Now that the vehicles were ready, we commenced the actual construction of the cave itself. Our first concern was the overall dimensions of the cave and how it related to the size and placement of the vehicles. We came up with a size by setting up the vehicles in their rough relationship to each other on a table. It was important to make sure the vehicles wouldn't be too close to each other, and conversely there couldn't be any 'dead spaces' where you would say to yourself "Hey! Shouldn't there be something right there?!"

Building in progress. Note the cave section edges.

An early phase of building.

The next major consideration was transportation. Not only did we ask ourselves, "Can we carry it easily," but will it even fit through the door? Carlyle slaps forehead! This is easy to overlook when starting a large project. We decided that it would be best to split the cave into three major sections that would slide apart for disassembly. Wayne did his usual magic and came up with a way to have registration pins made from axles where the sections meet, so they would stay together when on display.

Rock!

Now we get to two things that had to be worked out jointly from the start, and continually manipulated as we went, and that is the rock surface of the cave and the structure that supports it.

LEGO is a great thing for easily making shapes like houses, but when you try to make shapes found in nature, it takes a little more thought about how to pull that off so it looks convincingly like what you see in real life . In our case it was rock. My challenge, which I was excited to try, was to make the rock look like rock, not just a bunch of LEGO slapped down in an attempt at randomness. And that's the key, in my opinion: randomness. When you look at rock, with few exceptions, there are not repeating patterns. It's very easy to have patterns with LEGO. Randomness requires special effort. As I placed each piece, I made sure that the area surrounding it had no parts moving in the same direction in a way that would cause a pattern to emerge. Patterns were my enemy!

As I was doing that task I also had to consider how to keep it all structurally sound. This is where Wayne comes in. His many years of experience helped me see ways to make structure that was strong, lightweight and used as few bricks as possible to achieve both of those goals. He designed how the exterior walls of our cave attached to the interior rock walls. He also created simple ways to have openings in the exterior walls which would allow for access after they enclosed the rock.

A closer look at the rock detail work done for the cave.

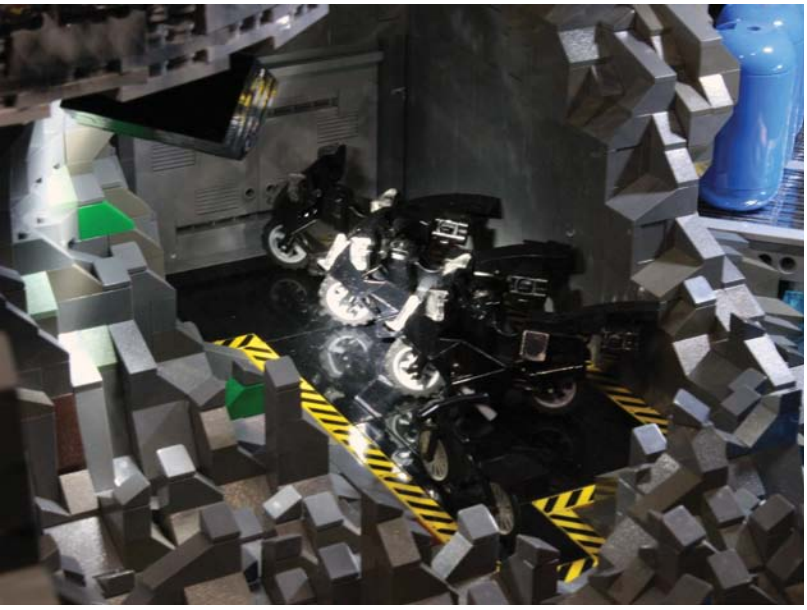
Beyond the structural look of the rock, we also considered the colors we would use. We experimented with different looks and decided that grey on grey was our favorite for a Batcave. We used old grey and old dark grey as well as new bley and new dark bley. We also added touches of white and black to give it a granite feel in places, and brown and green for dirt and lichen or moss, and splashes of reddish brown for rust. We alternated these colors in the same way we worried about creating patterns physically; we wanted no patterns in the coloration as well.

Our goal was to make a Batcave where everything looked like it belonged there. I think Wayne put it best when he said, "We built a cave to put Batman in, not a Batman that had a cave built around him."

A glimpse of the support structure inside the model.

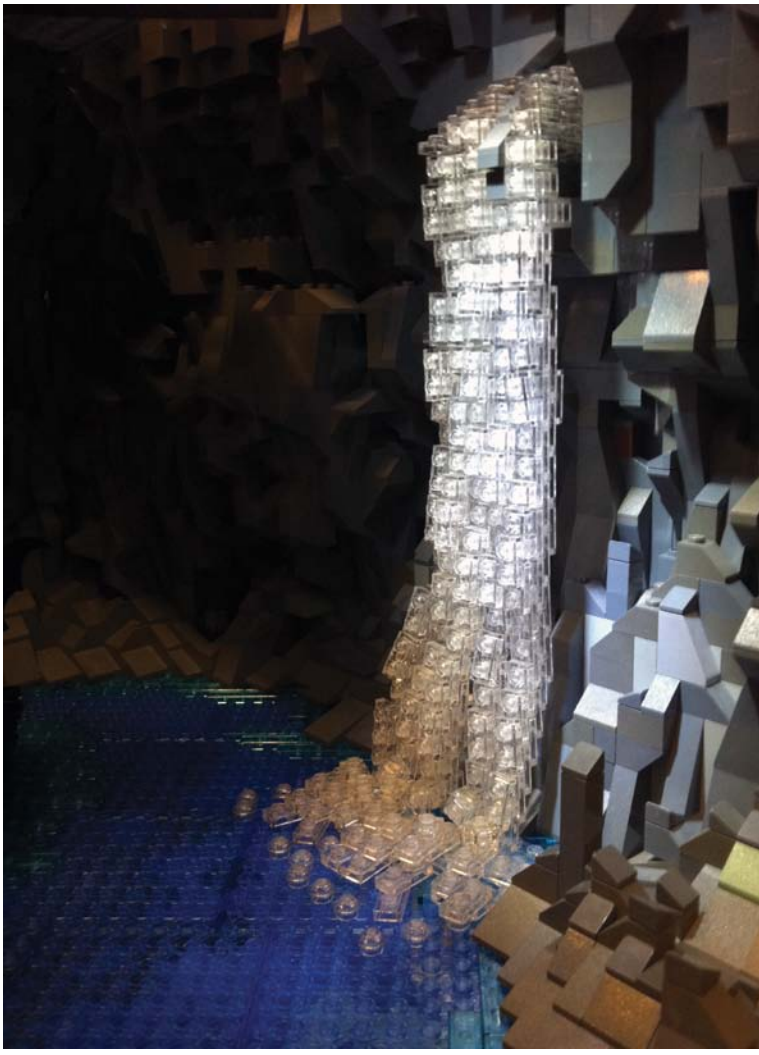
Adding Features

As we built the cave from the ground up, we started to see places where we could add features not previously planned. One of the first was the waterfall. I started playing with how to build it, but I was getting frustrated with my results. Wayne took over and made the beautiful version you see now. I added a couple of final touches and it turned into a perfect example of how teamwork can really shine.



Bat bikes ready for action.

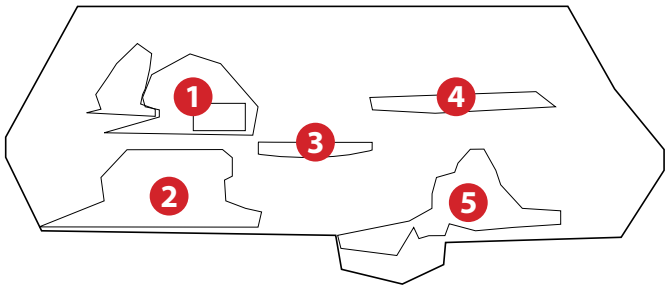
Another addition was the parking area for the Batcycles (and the Bat Bicycle – well, you have to have something for Robin to do errands with…). That came about because we had this void between the Batmobile turntable and the lagoon where the Batboat is. Of course! Where else would you keep the Batcycles?



The waterfall.

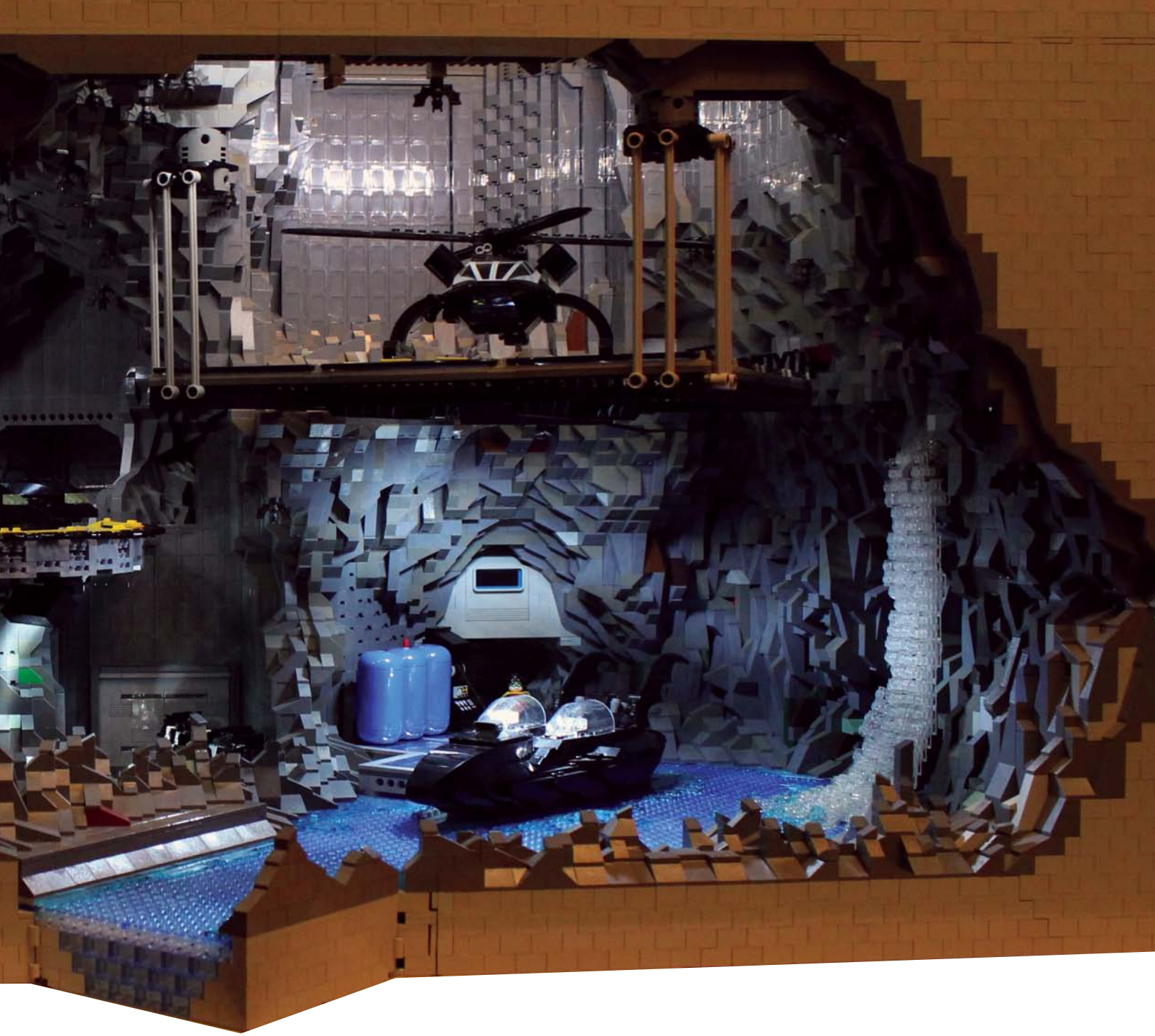
The Batcave Revealed

With so many details to see in the Batcave, BrickJournal *asked Carlyle about his favorite parts and highlights on the models and layout of this incredible creation. Here, he reveals some of the details and thoughts that went into design and building the various sections of the Batcave.*



1. The Control Room is one of my favorite areas in the cave. I created stickers to go over the Lego parts to add "realism" to the display. Of course, all the weapons on the Bat Weapon/Bat Suit Wall are strictly non-lethal. Also this is where we put in one of the passageways to another part of the cave. This subtle addition really helps with the feeling of depth we wanted to create.

2. The Bat Wing Hangar and Launcher really come to life with the mechanism that lifts the Bat Wing up and down. Having two Bat Wings was a great touch that we thought of as we went along. It really helps sell the idea of a working Batcave. Note the crane suspended from the ceiling of the hangar.



3 The Batmobile on its turntable looks very precarious perched on its pillar of rock, which adds to the mystery of Batman. The platform itself is an example of Wayne's skill at LEGO geometric building techniques. The stalagmite in front of the turntable is a must; every cave should have them.

4 The way the platform for the Batcopter is anchored at a skewed angle helps dispel the belief that LEGO only goes in 90° angles. You can also see through the grill that makes up the floor; this lets more light into the cave model. Landing and taking off in the Batcopter requires nerves of steel.

5 Robin seems to get a lot of the boring jobs. Fueling the Batboat – shouldn't that be Alfred's job? Here's another passageway to distant parts of the cave. What's behind that window above the boat? Oh, and can you spot the LEGO lipstick in this scene? The waterfall and the lagoon for the Batboat add another dimension to the feel of the cave.

An early shot of the Control Room, with the wall for Batsuits in progress.

The Batmobile's turntable in an early stage of construction.

Motorizing

Let's talk a little bit about mechanics. One of the things that gets a great reaction from kids and adults alike is the motion that Wayne created. Usually people first notice the Batmobile turning on its platform. Then they might spot the wall flipping from the Bat Equipment on one side to the Bat Suits on the other. Finally, if one of us is holding the remote control, we can raise the Batplane to launch position or bring it down. All of these mechanisms required hours of work; testing, experimenting, and re-working until Wayne had perfected a method that would function reliably over and over again.

The turntable for the Batmobile works off of two LEGO Power Functions Motors. One creates the spinning movement and the other lifts the Batmobile and engages the spin motion and then lets it back down again. The Bat Suit/Equipment Wall runs off of one motor and drives a LEGO Technic chain that turns around two gears. Every time the brick on the chain comes around and engages the wall, it turns it 180°, showing the other side. And the Batplane lift is connected to the Jet Blast Deflector and is run from a LEGO linear actuator.

All these functions run off the LEGO Power Functions battery packs and run continuously when on display, except for the Batplane lift which is operated by LEGO wireless infrared controller. There is no doubt that much of the appeal in this Batcave comes from Wayne's mechanisms.

Building the Batplane Hangar

The Batplane hangar behind the lift is another example of making it up as you go. While we were building we realized there should be a way for the Batplane to return successfully from a mission – I mean, in the off-chance the Joker doesn't shoot it down. So we decided that behind the hangar was the runway where it landed and the entrance was back there somewhere. This also points to something else we believe is important in these types of MOCs: depth.

A close-up of the Batplane hangar.

We positioned the hangar doors cracked open slightly and placed behind them a rolling stairway as you might find at an airport. This gives the illusion that there is much more happening back there than you can see, which adds to the overall enjoyment of the viewer as they discover new areas they might have missed on first viewing. That is also why we have corridors all over the place that lead to other mysterious parts of the Batcave. Your imagination fills in the rest!

Building the Control Room

The Control Room was one of the last areas we built and where many significant changes and omissions occurred. Early on in the build, in fact right after the vehicles were finished, I got inspired and made mock-ups of the Bat Computer Monitors and desk as well as the Batpole, another homage to the '60s TV show. (One humorous note is that I didn't own a Batman mini-fig at the time so I used one of my Darth Vader mini-figs as a stand in for Batman.)

I had a very specific image in my head of how the computer monitors should be arranged, heavily influenced by the Tim Burton *Batman* movie. Also the Batpole mock-up served two purposes; one was to show how the Batpole tube would appear and the other was to show the technique of having the Batpole penetrate into the rock in the ceiling and see how that looked. I was very pleased with the result!

The stairway from the Bat Computer to the main control room floor was another study in design evolution. We first built a spiral stairway with a railing, and this was okay, but it just looked too clunky. Scale is a touchy thing. If the railing is too bulky, it throws off the look of everything around it. So we decided to lose the railing and let Batman face the potential lawsuit when Alfred trips and falls off. But, in our defense, it looks much better the way it ended up, if not safer.

One casualty of the design process was Wayne's idea for the Rogues Gallery of Villains™. This was quite a cool idea and we both spent a bit of time working on making it light up. We just couldn't make it fit. Or more accurately; one day I was building in that area, pulled it out to do something, forgot about it and built merrily on to the point where I realized I forgot it. We both looked at how the area turned out, shrugged our shoulders, said "oh well!" and moved on. I think it must have been an unconscious urge to leave it out on my part… but don't tell Wayne I said that. Happily it made a brief appearance at Emerald City Comic-Con, much to the delight of many kids and adults pretending they were kids.

Batpole, anyone?

The Batcomputer begins to take shape.

The Rogue's Gallery close up.

Another look at early construction of the Control Room.

The Roof

The roof is an easily overlooked part of the Batcave, which is ironic as it's almost impossible to miss! First of all the roof is another example of Wayne's expertise in LEGO structure. He made the roof pieces out of what he calls Brick Plywood™. Basically what that means is that he came up with a way to layer the LEGO bricks in two directions 90° to each other with Technic axles as pins. This creates an incredibly strong structure that is self supporting. Just look at how far the LEGO spans across the front of the cave with virtually no sag! I don't think I would have thought of that solution on my own. Thanks Wayne!

Wayne at work building Brick Plywood at his studio.

So once Wayne made the structure and we got to the point where we had the three main sections of the cave ready, I started adding the rock to the roof so our cave really looked like a cave, and completely surrounded our Caped Crusaders! The trick here was making sure that the roof was removable, and yet you couldn't see any seams when you peered under the roof and looked inside.

Speaking of Bats

First of all, you can't have a Batcave without bats. Secondly, it's a good thing Wayne had a lot of bats so we didn't have to buy more. Thirdly, and most importantly, LEGO bats don't have LEGO bat guano. That's all I have to say about that. I'm sure Alfred appreciates it as well.

Lighting

I've saved lighting till the end.

I think you will see more and more lighting in LEGO MOCs. When I first came back to the hobby a few years ago, I noticed that there didn't seem to be much in the way of lighting in MOCs. I wanted to explore this as I felt it was something that could really improve the presentation of many LEGO concepts. Fast forward a couple years and I start seeing more and more people using light. This makes me very happy. In fact, at BrickCon this year and last, there was a whole section dedicated to the lighting of MOCs. I hope this trend continues.

Lighting is, I think, one of the most important parts of our Batcave. If you look at our cave when it's all set up on display and the lights are off, it looks pretty cool because nothing can take away from the fact that we did a great job building the shapes and structures that make up the cave. But with all the lights on, it turns into a show piece. The lighting not only helps set the mood, but makes it so you can see all those cool details that would be lost in the dark. After all, it's a *cave*!

Now here's where the LEGO purists™ will be frowning and shaking their heads. All of the lighting in our cave is not from LEGO.

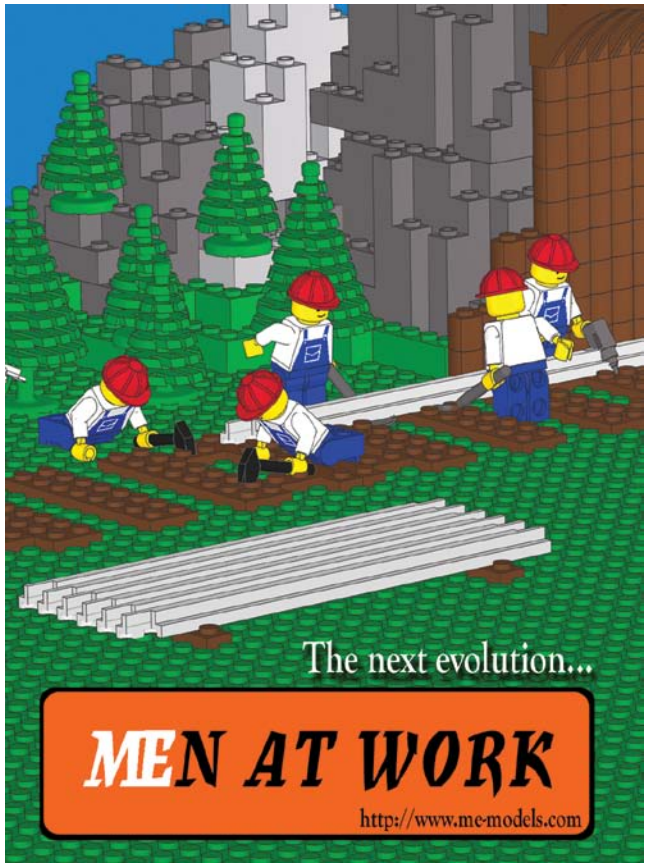
Gasp!

Well, except, sort of… the strip LED lights in the top are from a LEGO retail display case. So, we're not complete heathens… but the rest is from multiple sources. Some of the lights are from Target battery powered Christmas lights. (Those are the ones in the Batplane hanger over the crane.) The lights in a ring over the Bat computer are also battery powered Christmas lights from Michael's Art Supply. The rest are from cheap LED flashlights from various discount stores. We cannibalized the lights out of their housings and rewired them to run on one battery source. Fortunately, Wayne's background is in circuit design so that task was mostly his. The reason we used batteries for everything was because we knew that we would not have access to AC power at ECCC. As of this writing we have not switched to AC power yet, but we have every intention of doing so.

Planning the Future

Since our Batcave pictures were posted on The Brothers Brick the response has been tremendous, to say the least. Of the many comments we get, some stand out as being asked over and over again. "Where's the giant penny?" or "No T-Rex?" and of course, "Are you going to put Wayne Manor on top?" I asked Wayne and he said, "We'll see." So there you have it. Who knows if we will ever add more or go on to a different project all together? We certainly had a blast building it and it's one of the most fun projects I've ever been involved with since I started LEGO building. I hope you found this article informative and entertaining. Thanks, and we will see you at BrickCon!

Carlyle Livingston and Wayne Hussey



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Greyson MacLean

BrickStix®: A Timeline

Information provided by BrickStix

BrickStix are removable/repositionable stickers and clings for MOCs, the invention of Greyson MacLean. In the short time that the product has been around, it has garnered accolades and praise from websites and television shows. BrickStix can now be found at toy stores and online at Brickstix.com.

However, it did take some time to get things ready and produced. With some help from Amy MacLean, here are some of the Big Moments of BrickStix, or an inventor's timeline.

1999

September 1 – Greyson Arden MacLean is born.

2004

Greyson moves from Duplo to LEGO System

2009

Greyson's frustration with permanent stickers comes to the boiling point. He wants to customize his LEGO builds. However, he doesn't want them to be permanent. He dreams up BrickStix. Greyson figures out the material using inspiration from a new pair of sunglasses

Purchase begins on many different web addresses. BrickStix was the name, but we were not sure how we were going to spell it yet.

The calls and questions begin: we start to figure out materials, packaging, printing, and distribution.

The Team is formed. Design brainstorming begins. Greyson researches and sketches. Nate brings them to life.

Greyson and his family start testing different materials.

2010

BrickStix.com goes live!

BrickStix are toy tested to make sure they adhere to all US safety standards. We pass!

Patent Application filed.

The first three Brickstix sets are worked on: Metro, Transport, and Space.

The first run of BrickStix is finished! Hooray! Celebrating ends when we realize they all had to be tossed. Problem with the ink adhesion. Entire first run needs to be re-run.

New process gets figured out. First run of BrickStix gets re-run. Perfection!

Greyson appears on *Conan* in Los Angeles. It was an incredible night!

Greyson is nominated for the TAGIE Award for Young Inventor of the Year.

BrickStix meet Brickworld Chicago! We debut Mod stickers to test the market. They did great. What an experience! We made lots of friends who continue to help us navigate the brick world.

We have a warehouse. Now *they* pack and ship!

More BrickStix. Meet Rescue, Splats and Shops.

BrickStix debut at Toy Fair in New York! They are received with great excitement. A lot of International interest. Uh oh- we weren't ready for that!

BrickStix start shipping to stores around the United States. We shipped from our house!

More testing necessary for proof we meet international toy safety standards. We pass again!

BrickStix receives its first write up in a national publication. *Disney Family Fun* June/July issue puts us in "Our Favorite Things" section and becomes one of hundreds of press spots.

Greyson wins the TAGIE for Young Inventor of the Year!

BrickStix makes the *Entrepreneur Magazine* Indie Merchants Holiday Gift Guide!

Entrepreneur Magazine writes about Greyson and his Sticky Toy Dilemma in their September issue. What a way to turn 13!

New packaging for BrickStix being designed.

Greyson appears in New York with Martha Stewart! We had a blast visiting The Big Apple!

BrickStix are on display at the National Museum of Play and will become part of their permanent collection.

2011 **2012**

Back at Toy Fair in New York. We debut our Mod stix to the world (Zombies, WWII, Special Forces, Comics and Medieval.) Now we have 6 BrickStix sets and 5 Mod. To think a year earlier we only had three total!

Back at Brickworld Chicago! Greyson wins the minifig speed building contest!

3 new sets of BrickStix debut (Signs, Pets, Home). New packaging for all BrickStix.

Hooray! It just got easier to order BrickStix in Europe! Check out www.brickizimo-toys.com!

Celebrating 50 years of LEGO® in Norway: "Bli med å bygge landet" *(Build a Piece of Norway!)*

Article by: Megan Rothrock and Are J. Heiseldal

Photography by: Are J. Heiseldal and Bjørn Håvar Falck-Andersen

A completed map of Norway in LEGO bricks! Photo provided by Matija Pužar.

This past November Megan Rothrock had the opportunity to travel to Oslo, Norway to attend a special LEGO event: "Bli med å bygge landet"- in English, "build a piece of Norway." LEGO celebrated 50 years in Norway inviting visitors to come to the Telenor Arena, which they filled with five million LEGO bricks! For this journalist and LEGO event veteran, this was a very different style of LEGO event to attend. Never before had there been so many loose LEGO bricks to build with, encouraging the visitors to build up a model and place it into a massive map or Norway!

Strong enough to hold a train; this mountain bridge was built by Bård Nome.

The Norwegian LUG Brikkelauget and a few members from the Danish LUG Byggepladen were at the celebration with some fantastic MOCs to display for the visitors to enjoy. *BrickJournal* was able to get a quick moment with the head of Brikkelauget (Norwegian LUG) Morten Dalermoen to ask him about this special event.

BrickJournal: ***Can you tell our readers a bit about the "Bli med å bygge landet" event?***
Morten Dalermoen: Our event was a celebration for the 50-year anniversary of LEGO in Norway. It was held November 2nd to 4th at one of Norway's biggest arenas just outside Oslo. This was a very special event for us; a 70 meter long map of Norway was set up, where all visitors could build something from one of the many building bins and put it out on the big map. Brikkelauget (the Norwegian LUG) put three well-known buildings on the largest cities to mark them and had a large city layout to show some great Norwegian MOCs. We also had members from Brikkelauget building onsite on the Akershus Fortress (a well-known building in Oslo), to show visitors how we build. There was also a Historical Timeline with some standard sets from the last 50 years.

BrickJournal: ***Do you know how many people attended?***
Morten D.: We had more than 7000 visitors attend our event over the three day event.

BrickJournal: ***The 'Build a Piece of Norway' display was a great activity for the visitors to participate in; do you know who came up with the concept? How big was the display area for it?***
Morten D.: The concept was an idea from LEGO Norway and it was very popular with our visitors to the event. We even had special guests Jørgen Vig Knudstorp (the current CEO of the LEGO Group) and his family visit. It was nice to see his son and daughter build some fun models and place them into the Norway layout.

BrickJournal: ***How many members from Brikkelauget brought MOCs to display?***
Morten D.: We had 33 members from Brikkelauget, 4 invited guests from the Danish LUG Byggepladen, and author of *The LEGO Adventure Book* Megan Rothrock had brought models to display.

Visitors busy building their own version of Norway with LEGO bricks.


Train layout models from the left: Fredrikstad Train Station by Henrik Solberg, Modern house by Birgitte Jonsgard, and Voksenhagen by Asbjørn Sannes.

BrickJournal: ***How many members from Brikkelauget attended?***
Morten D.: During the event about 40 members from Brikkelauget attended.

BrickJournal: ***Is there anything else you would like to add regarding your great event?***
Morten D.: I'd like to thank all of the members from Brikkelauget and Byggepladen who helped make this a special event for everyone, and a great partnership with LEGO Norway.

Building "Det Kongelige Slott:" The Norwegian Royal Palace

Built by Morten Dalermoen

***BrickJournal*: Did the Royal Palace ask you to build the Palace for them out of LEGO bricks for this event?**
Morten Dalermoen: No, it's something I've wanted to build for a long time and this was a great opportunity to do it.

***BrickJournal:* The Royal Palace is a very beautiful and iconic building; were you able to visit it before hand to study it?**
Morten: The Royal Court invited me to the Royal Palace and I got a first-hand tour inside and outside, with the opportunity to take photos and study the structure as a basis for construction.

Royal Ride limo by Are J. Heiseldal.

***BrickJournal:* How long did you have to build it?**
Morten: From when I started planning I had 5 months to build it.

***BrickJournal:* Do you know how many elements were used to build it?**
Morten: There are about 85,000 to 90,000 LEGO elements in the Royal Palace.

***BrickJournal:* Did you have all of that sand green for the roof already?**
Morten: I had no sand green bricks before I started, so I had to order the parts especially for this project.

***BrickJournal:* Was there anyone else involved in building anything for it?**
Morten: I got some help from some of the members from Brikkelauget to put on tiles. There are about 10,000 tiles on the basement floor, ground floor walls and some on the ground around the building.

***BrickJournal:* Have you completed all of it or are there still sections you would like to add to it?**
Morten: It was built to mark Oslo on the large map of Norway for this event. Next stage is to build the outside gardens, details on the front of the building and get a royal car to move around the layout, and of course many minifigs to bring it to life.

***BrickJournal:* Are there any future plans for displaying "Det Kongelige slott" at the Royal Palace or other future LEGO events?**
Morten: The Royal Palace will be at LEGOWorld 2013 in Copenhagen.

Diagonal Road by Øyvind Steinnes.

Modular Pharmacy by Are J. Heiseldal and Wax Museum by Daniel Gran.

Train Layout:

There were about 35 AFOLs including 2 from Denmark who were involved with building a massive train layout with no less than seven train stations on it; the city part of it alone being 86 square meters.

Train Cam:

There was a camera mounted on a train car, which then was pushed by a locomotive and ran through the entire layout. You can view it here: *http://www.youtube.com/watch?v=ivXucM7dHZs*

LEGO Certified Professional Matija Pužar had two models on the layout. The first one was a giant rendition of the Øresund Bridge (which connects Denmark and Sweden), placed in the center part of the layout. He also displayed an automated gantry crane that he built together with Brikkelauget member Morten Enger.

Press Coverage:

Brikkelauget worked hard to get proper press coverage and was rewarded with several news stories in national media, both leading up to and under the event. Norwegian radio and TV channels also did live broadcasts during the event, featuring several of the builders.

Swimming hall built by Helge Viker.

Wooden House diorama from Claus Pedersen of Byggepladen.

Building Snowy Mountain

Built by Cecilie Fritzvold

Ice climbers brave the side of the mountain.

Hit the slopes! A bird's eye view of the downhill.

Snowy Village: a perfect place to stop for some hot cocoa.

BrickJournal caught up with Cecilie Fritzvold to talk to her about building this mammoth MOC.

***BrickJournal:* What inspired you to build the mountain?**
Cecilie Fritzvold: It was a mix of wanting to create a larger layout for my winter village houses that I'd built to go along with LEGO's own winter village sets, my love for Norwegian snowy winter landscapes which are so beautiful, and wanting to build something really cool and big for LEGO Norway's 50-year anniversary event.

***BrickJournal:* How long did it take you to build it?**
Cecilie: I ordered the bricks from LEGO in late May, and was promised that they'd arrive in the beginning of July, which would have given me almost 4 months to build the mountain, including 3 weeks of summer holiday. Unfortunately, the shipping company "lost" my order somewhere in their warehouse for about a month, so I ended up getting it in mid-August instead – meaning I basically only had a little more than 2 months to build it. Needless to say, there were many late evenings in those months.

BrickJournal: ***Any idea how many LEGO bricks might be in it?***
Cecilie: I do have some left-overs from the 30,000 I ordered from LEGO, but then I have used quite a lot of bricks I already owned as well, so I'd say at least 30,000, possibly more.

***BrickJournal:* There are so many nice details; was it challenging to build them in?**
Cecilie: The details are always challenging, and it's not easy to make everything fit together in such a large MOC, especially when trying to build it in modules that are easy to separate. Some of the hardest parts were the ski slopes; both the downhill and the cross country ski tracks were hard to shape to look natural. I also wanted to cram in as many details as I could, which was a challenge since the mountain wasn't getting any bigger. As a minifig scale mountain, it's quite "small", but I was able to put in so many different sections and details so it appears to be larger. Also, details are what I love, it's no fun to just stack bricks to build big if there aren't a lot of details built in. The most fun detail to put in I think were the trees. I built a bunch of them, trying to make them all a bit different, and when I put them on, the mountain went from being a big white blob to actually look like a real mountain. That was a great feeling.

***BrickJournal:* Is there anything else you would like to share with our readers regarding your Snowy Mountain MOC?**
Cecilie: It's by far the largest project I've ever done, and I'm never doing something that big again in such a short time frame. Well, that's what I'm saying now anyway. It was a lot of fun, but it was also a lot of stress because my bricks were delayed and I had to finish it for the event. And even though I'm quite pleased with the result, there are still improvements I want to make before the next time it will be displayed. Hopefully there will be movement in the ski lift, and possibly some other surprises.

BrickJournal thanks Morten, members of Brikkelauget and LEGO Norway for such a fantastic event and experience!

A giant rendition of the Øresund Bridge (which connects Denmark and Sweden) by LEGO Certified Professional Matija Pužar. Train on bridge built by Bjørn-Erik Gunnerød.

Train station built by Bjørn Einar Storsveen.

TV 2 Norway interviews Morten Dalermoen with their own custom built LEGO microphone.

Members of Brikkelauget eagerly awaiting the National News broadcast of the event on TV.

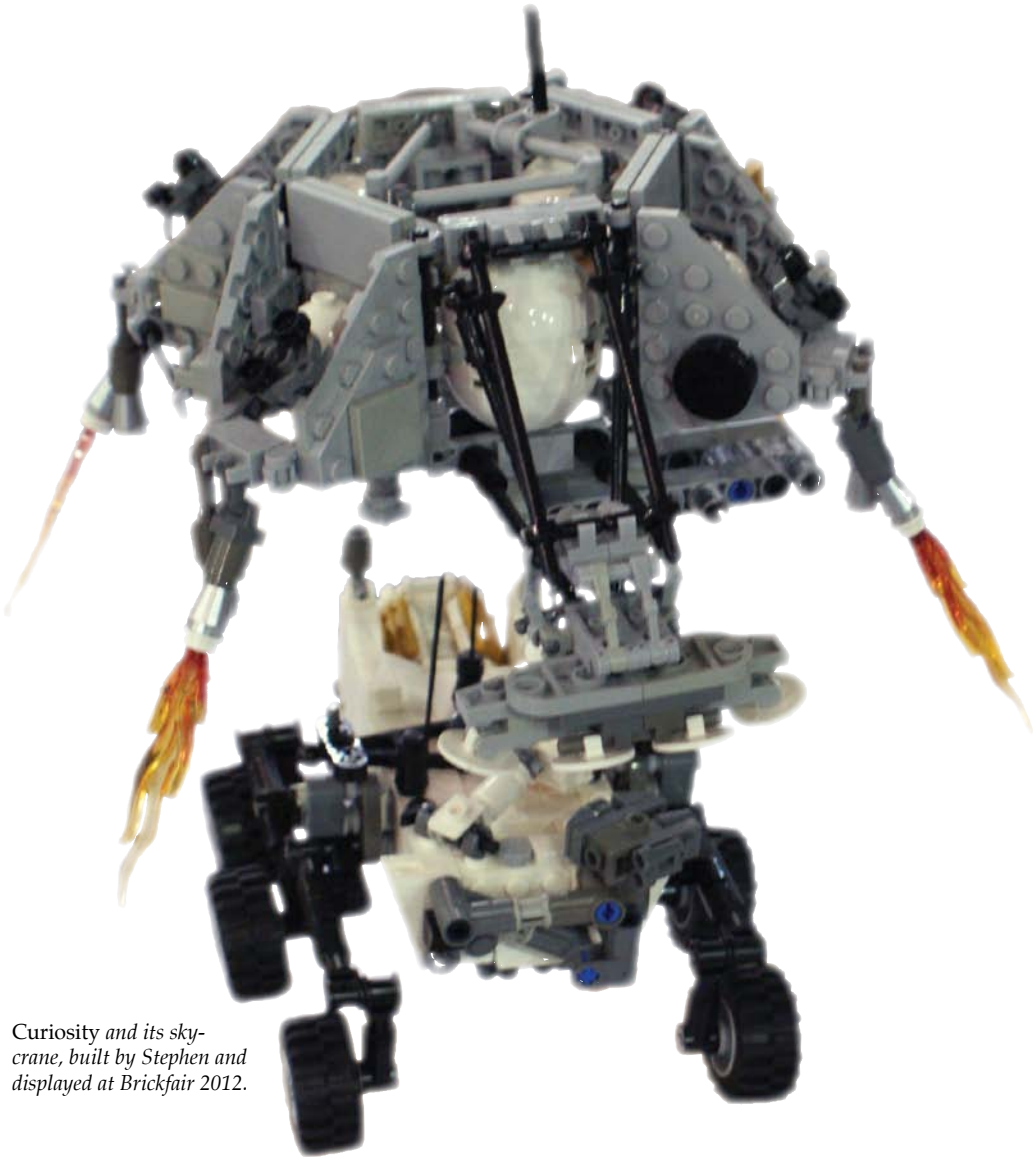
Morten dives into a 'pool' of LEGO bricks!

NASA AFOL!

Article and Photography by Stephen Pakbaz

2012 will be known to space fans as the year that Curiosity landed on Mars. One of those fans is Stephen Pakbaz, who lives in Virginia and is a member of WAMALUG (the Washington and Metro Area LEGO Users Group, based in Washington, DC). Not only has he built space-themed models, he also is a designer for a NASA contractor!

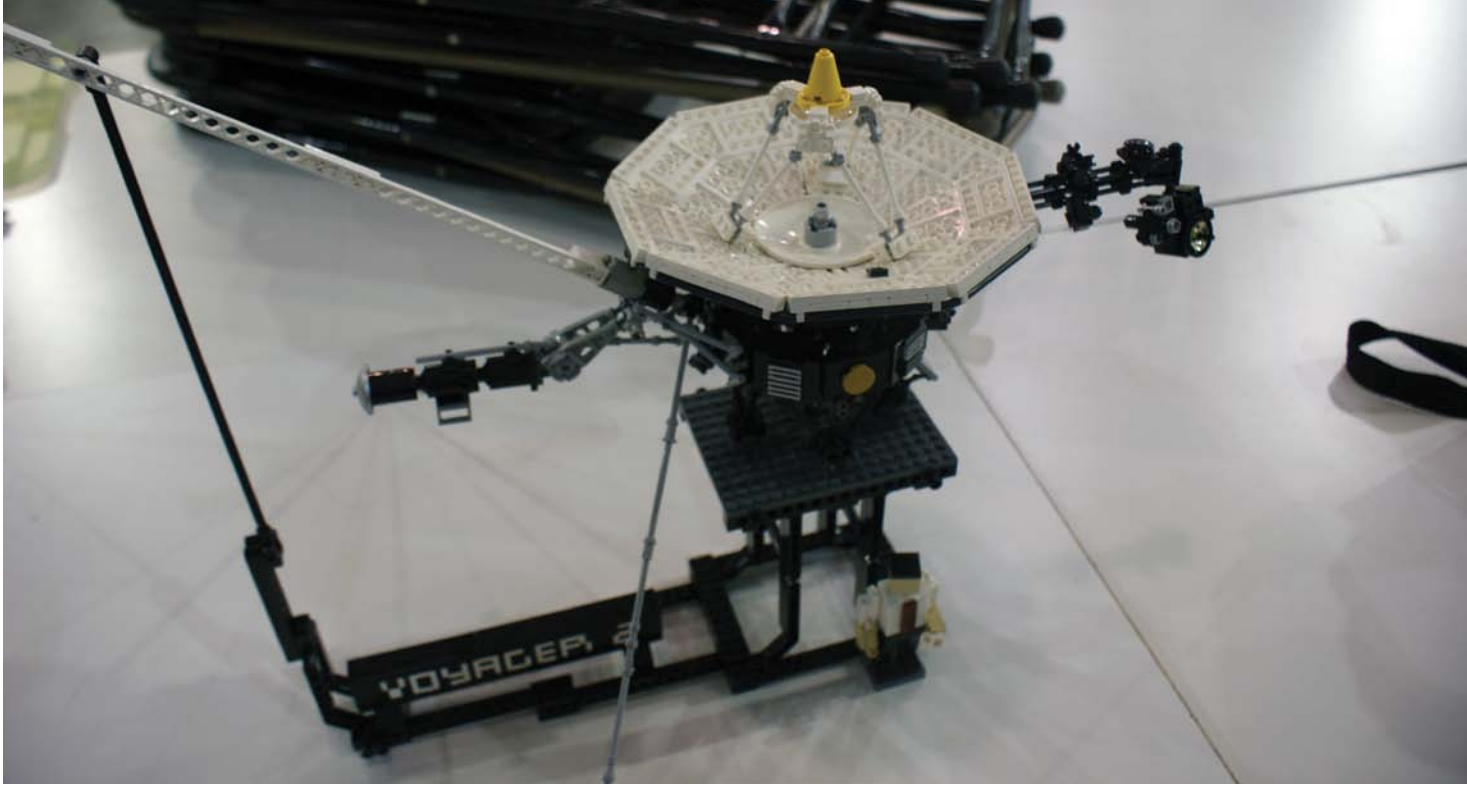
Here, Stephen talks about the models he has built and the work he does with his LEGO building.



Curiosity *and its sky-crane, built by Stephen and displayed at Brickfair 2012.*

The first NASA models I built were not my own design, but from the LEGO Discovery theme. It was released in 2003 and consisted of six sets: a Space Shuttle (7470), Apollo spacecraft (7468, 10029), Mars rovers (7471, 7469), and the International Space Station (7467). Before then, the space models I made were from the realm of science fiction, my own research into interplanetary space travel, and my imagination. The first NASA LEGO creation that I designed myself was the Curiosity rover, early in 2011. At the same time, I was a Mechanical Engineer at the Jet Propulsion Laboratory (JPL), where I helped perform tests and design parts for the real Curiosity rover. I used my firsthand experience with the real rover to make the model as accurate as possible. The Jet Propulsion Laboratory, birthplace of robotic space exploration, was a treasure trove of useful information. Models and displays fill the hallways and entrances to most buildings. Also on the laboratory premises is a fantastic museum and library, which I visited often. I made use of these resources to create other models such as minifig scale versions of the previous Mars rovers and the Voyager 2 spacecraft, with inspiration left over for many more models in the future. I am currently a Senior Mechanical Designer at the Orbital Sciences Corporation, which specializes in developing commercial and exploration spacecraft, launch vehicles, and other projects in cooperation with NASA. My recent Pegasus rocket and Cygnus spacecraft LEGO models have reflected this change and the recent overall increase in commercial space development.

The Curiosity rover was the first spacecraft I ever worked on, and I was very enthusiastic about discussing it with friends and family. While I was very familiar with this robotic vehicle, most others were not, considering it hadn't even launched yet. It was sometimes difficult to describe the rover and how it worked without images or models, especially parts like the mechanically marvelous rocker-bogie suspension system that the rover uses to navigate over obstacles and uneven terrain.



Stephen's model of Voyager 2, *a probe that is now leaving the solar system.*

The model was an excellent tool for showcasing the rover and demonstrating its functions and capabilities.

When I finished the Curiosity model, I created a digital copy using the LEGO Digital Designer software. I hoped to make it available for anyone to purchase through LEGO's Design By Me service. However, the service did not offer all the parts required and it was discontinued soon afterwards. Some time later, at a LUGOLA (LEGO Users Group Of Los Angeles) meeting, I was introduced to the LEGO CUUSOO website, where people can submit model ideas to LEGO and gather supporters. A project that receives 10,000 supporters will be reviewed by LEGO and potentially made into an official LEGO set. After some encouragement, I submitted my Curiosity model to CUUSOO in November 2011, just before the real rover began its journey to Mars. Nine months later, in August, the Curiosity rover successfully landed on Mars and shortly afterwards, my project achieved the 10,000 supporters required for the LEGO review.

I continued to work on other ways to expand the educational outreach potential of this model. One of the next things I did was use LDraw and MLCad to create step-by-step instructions and make them available for free on my CUUSOO page for anyone who couldn't wait to build their own rover. The instructions include educational information about the mission in the beginning along with descriptions of the major components spread throughout the rest of the instructions as they are built. The next logical step was to use these instructions to create kits. I gathered parts from BrickLink and the online LEGO Pick a Brick shop and assembled seven kits, one to represent each successful landing on Mars. These kits were donated to various museums and outreach programs to assist in their own educational efforts. The recipients were the Smithsonian National Air and Space Museums, the Scienceworks Museum in Australia, the JPL Mars Public Engagement Office, the Planetary Society, a Brickfair Charity Auction, and the Solar System Ambassadors Program.

My LEGO Curiosity rover project has been an extremely satisfying experience and ended up being a great way to engage with the public and other space exploration advocates.

My other space models have been on public display at several occasions. I was an exhibitor at the 2012 Brickfair convention in Virginia and have participated in multiple group displays with WAMALUG (Washington Metropolitan Area LEGO Users Group) at the Smithsonian National Air and Space Museum. I used these opportunities to talk with visitors about the real Curiosity rover and its mission. My space models, including the rover, have also recently been on display at my local LEGO store.

Cygnus, *a space cargo transport for the International Space Station.*

You Can Build It

MINI Model

Curiosity Rover

Design and Instructions
by Stephen Pakbaz

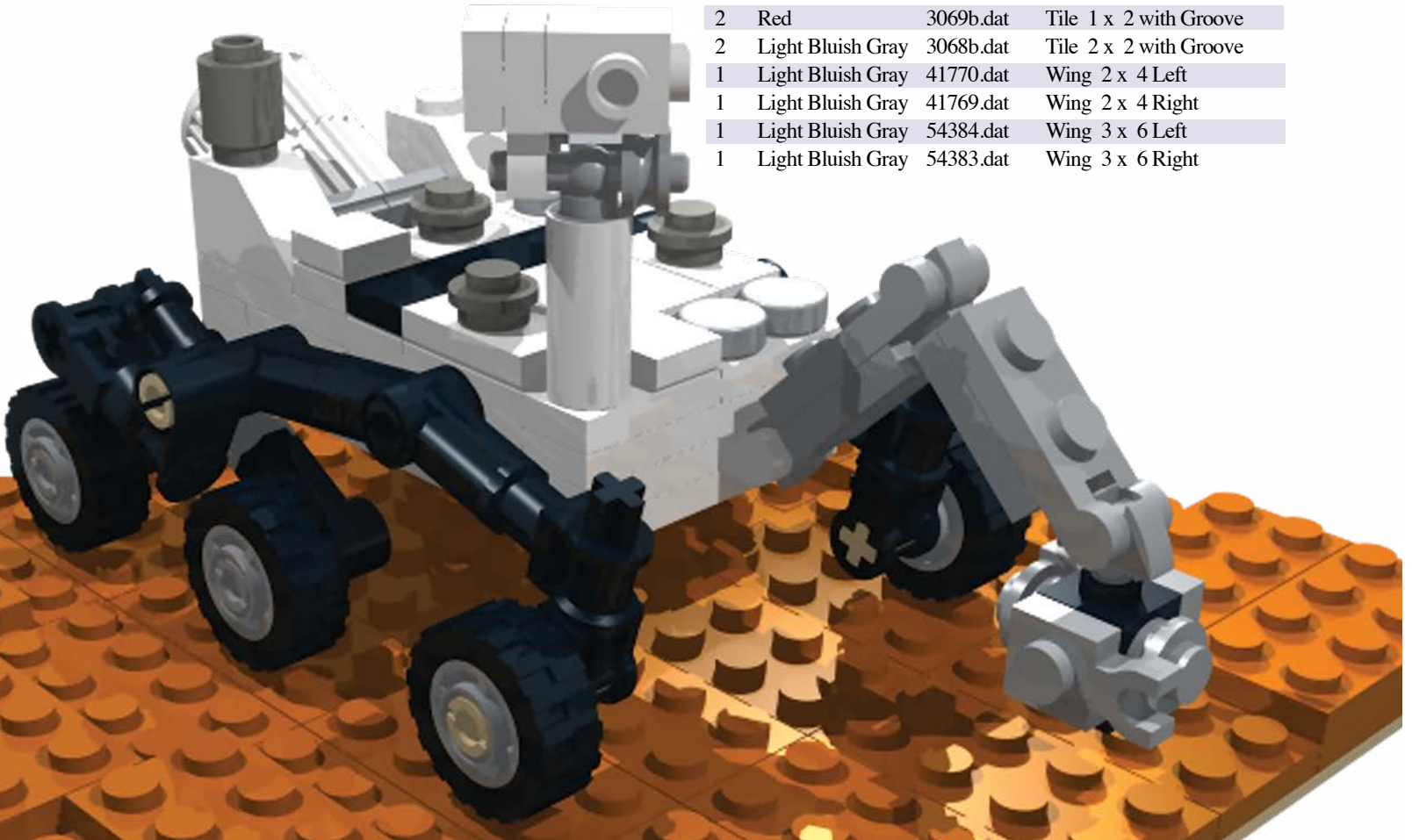
With the landing of *Curiosity*, it only seemed fitting to have a model of the rover in *BrickJournal*. We are fortunate to have the model designed by the same person that designed the LEGO CUUSOO version.

This version is a minifigure scale model of the rover, and has many of the details of the larger CUUSOO version. The model has an accurate rendition of the suspension and instrument arms, and can be rolled around to show its suspension.

Many thanks to Stephen Pakbaz for the model design and digital model!

Parts List *(Parts can be ordered through Bricklink.com by searching by part number and color)*

Qty	Color	Part	Description
1	White	30374.dat	Bar 4L Light Sabre Blade
1	White	4070.dat	Brick 1 x 1 with Headlight
2	Light Bluish Gray	4070.dat	Brick 1 x 1 with Headlight
1	Light Bluish Gray	3023.dat	Plate 1 x 2
2	Light Bluish Gray	60470.dat	Plate 1 x 2 with 2 Clips Horizontal
2	Light Bluish Gray	48336.dat	Plate 1 x 2 with Handle Type 2
4	Light Bluish Gray	3710.dat	Plate 1 x 4
1	Light Bluish Gray	2420.dat	Plate 2 x 2 Corner
2	Trans-Clear	50746.dat	Slope Brick 31 1 x 1 x 2/3
2	Light Bluish Gray	50746.dat	Slope Brick 31 1 x 1 x 2/3
1	White	32123a.dat	Technic Bush 1/2 Smooth with Axle Hole Reduced
2	Red	3069b.dat	Tile 1 x 2 with Groove
2	Light Bluish Gray	3068b.dat	Tile 2 x 2 with Groove
1	Light Bluish Gray	41770.dat	Wing 2 x 4 Left
1	Light Bluish Gray	41769.dat	Wing 2 x 4 Right
1	Light Bluish Gray	54384.dat	Wing 3 x 6 Left
1	Light Bluish Gray	54383.dat	Wing 3 x 6 Right



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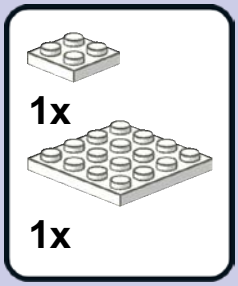

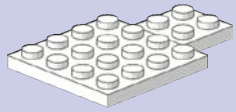

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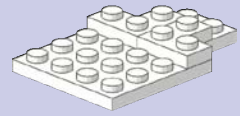

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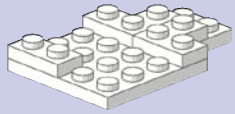

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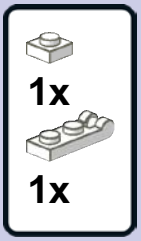

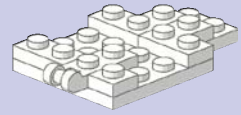

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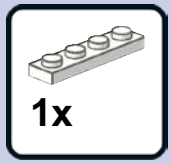

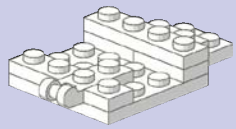

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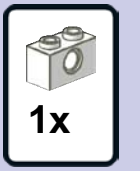

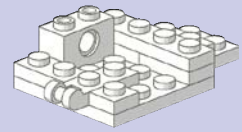

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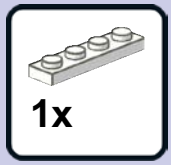

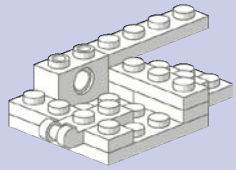

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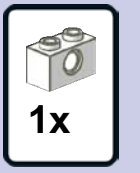

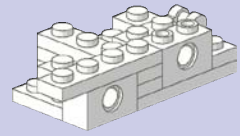

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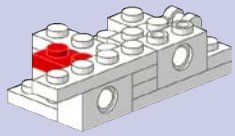

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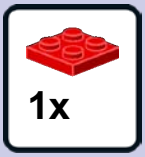

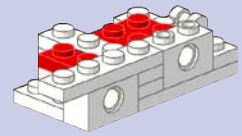

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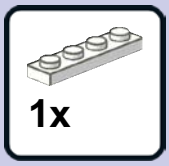

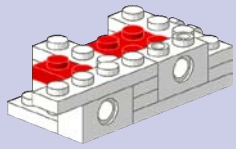

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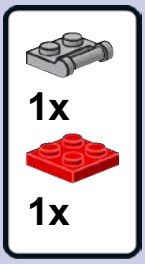

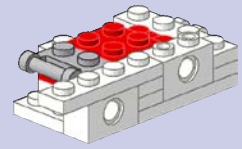

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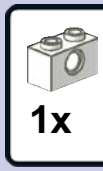

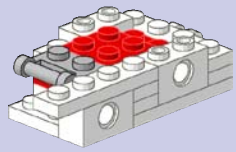

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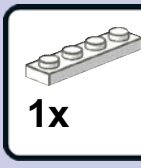

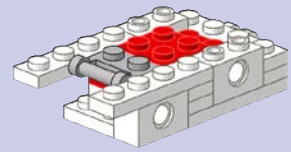

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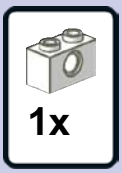

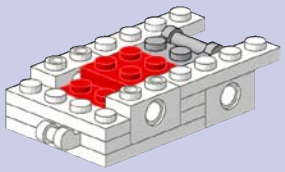

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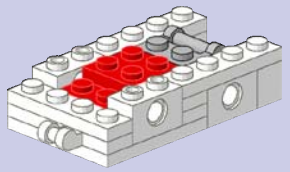

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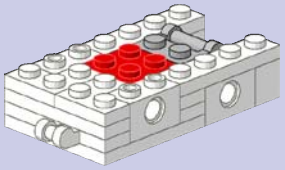

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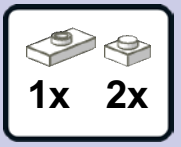

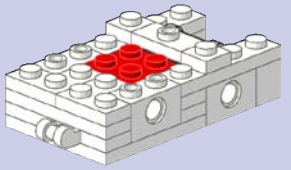

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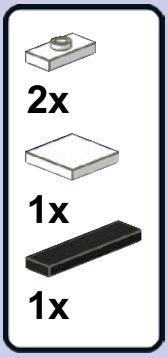

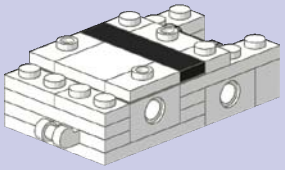

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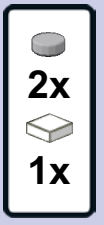

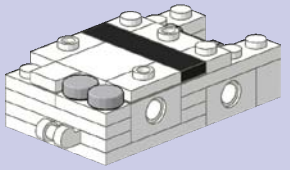

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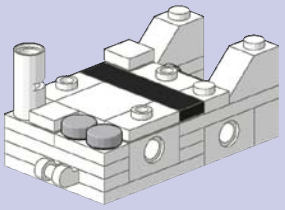

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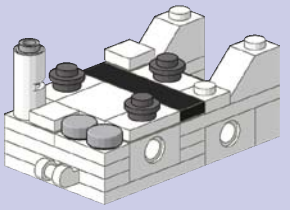

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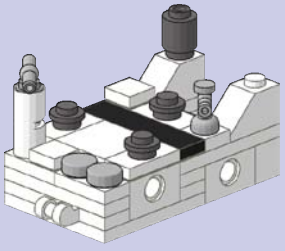

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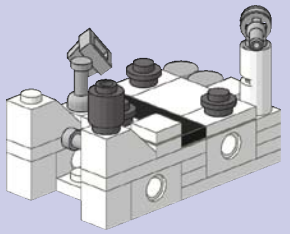

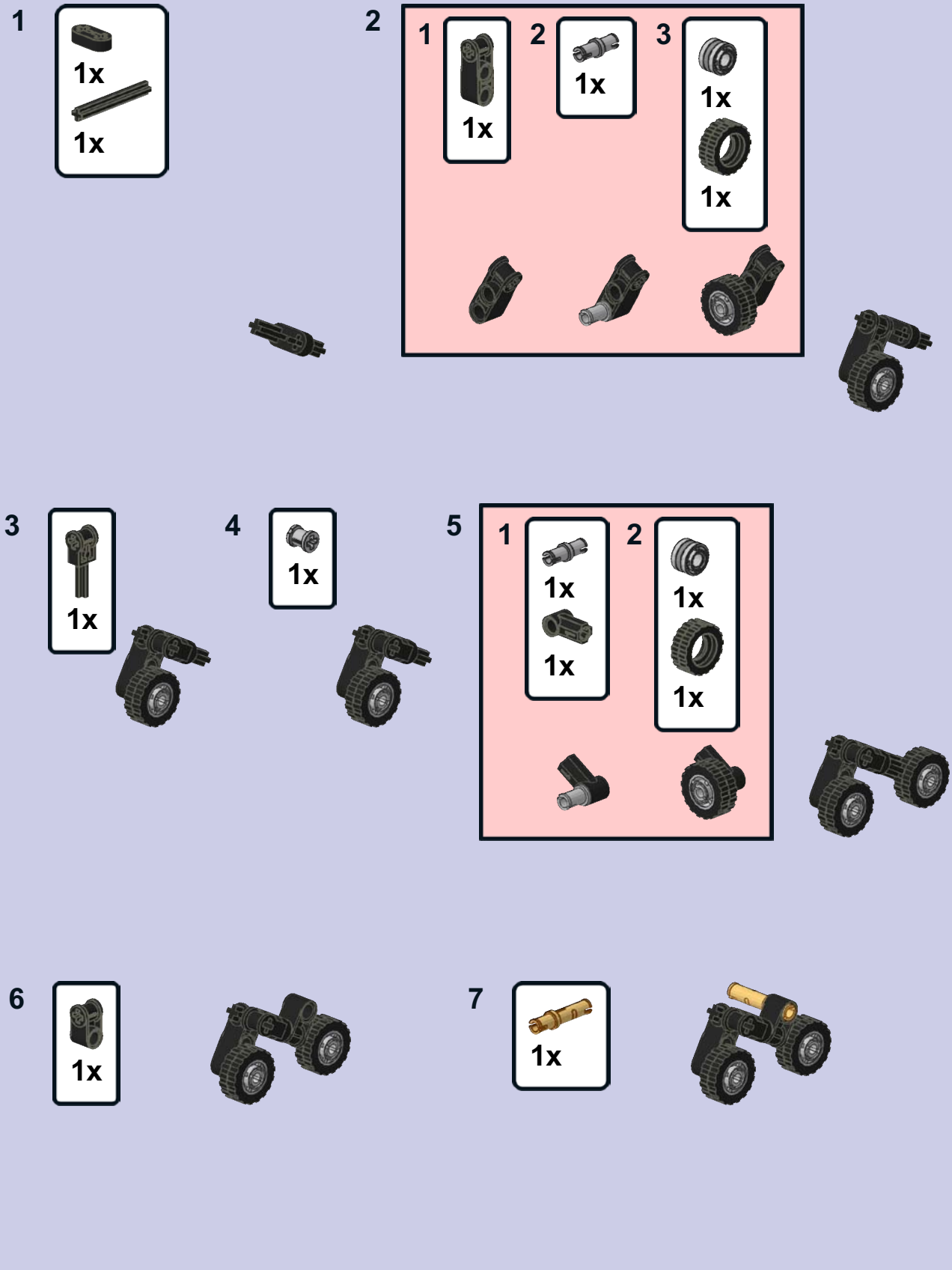
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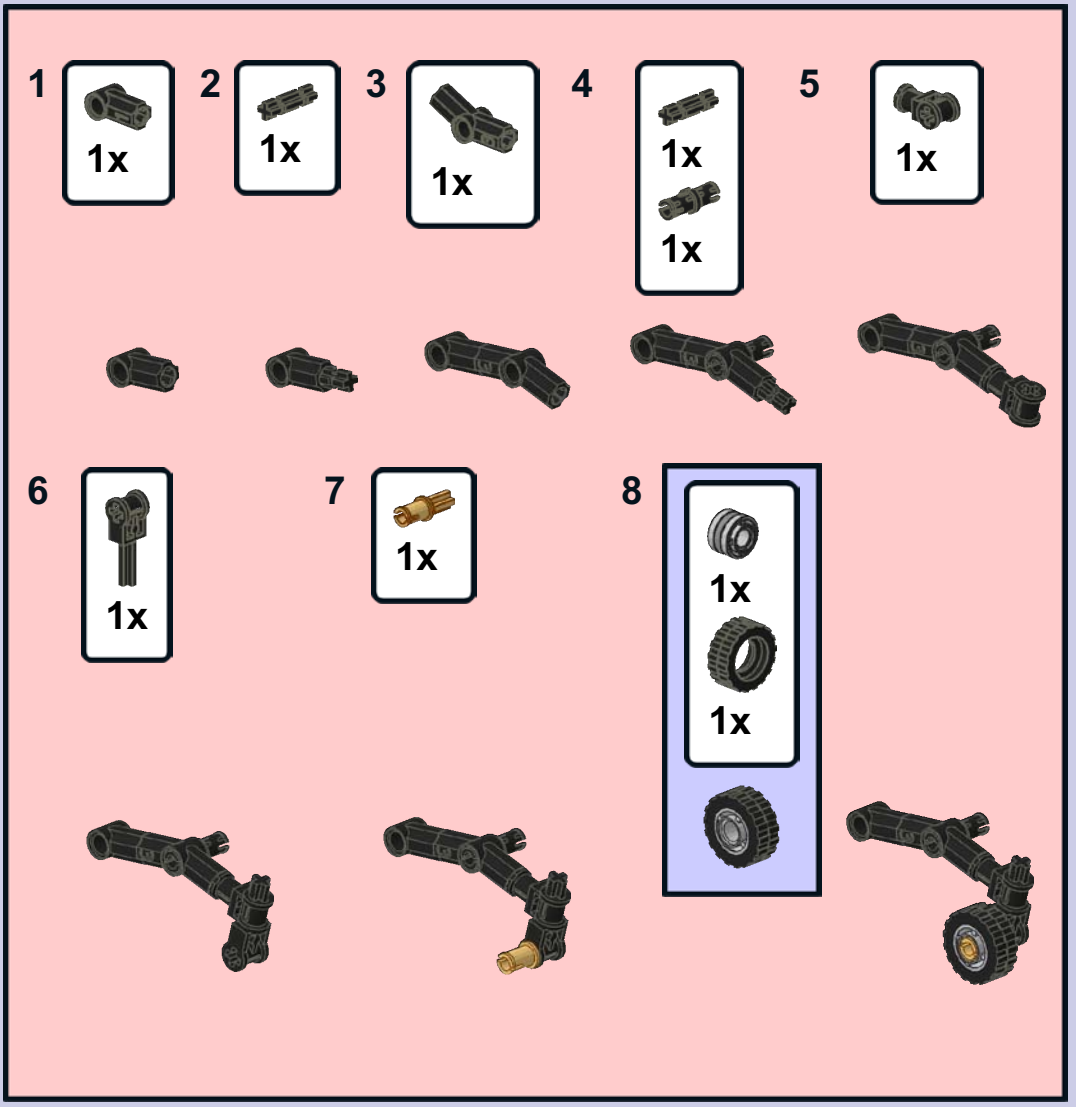

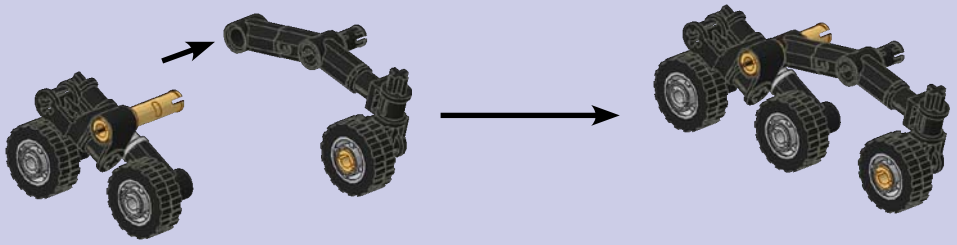

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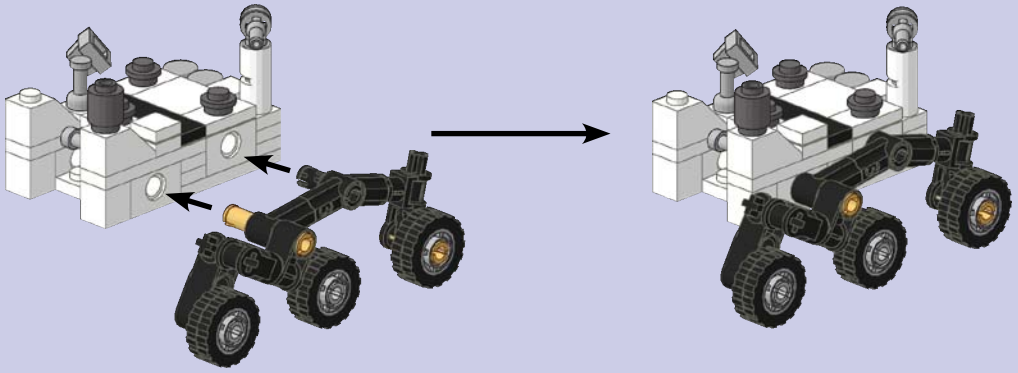

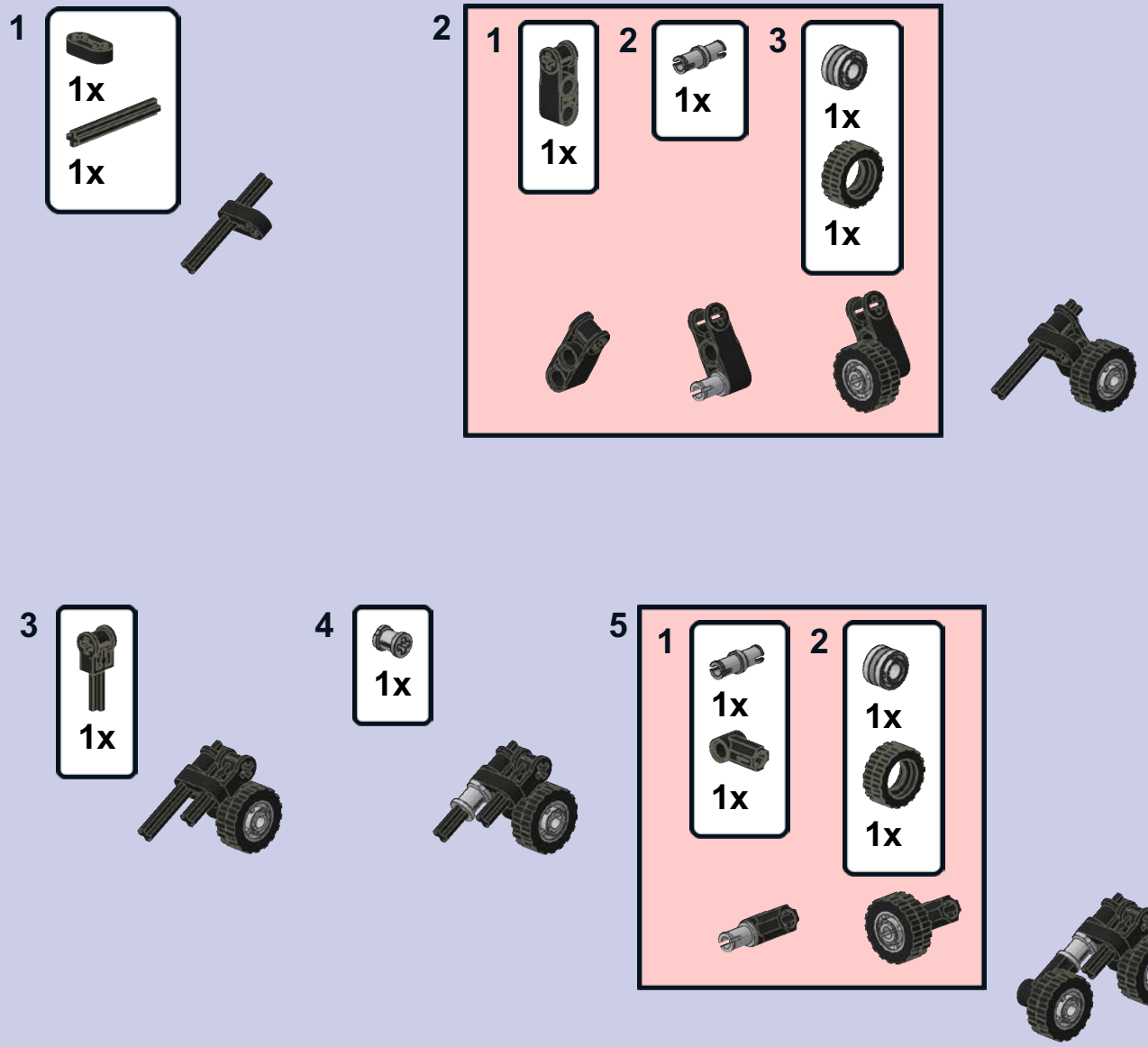
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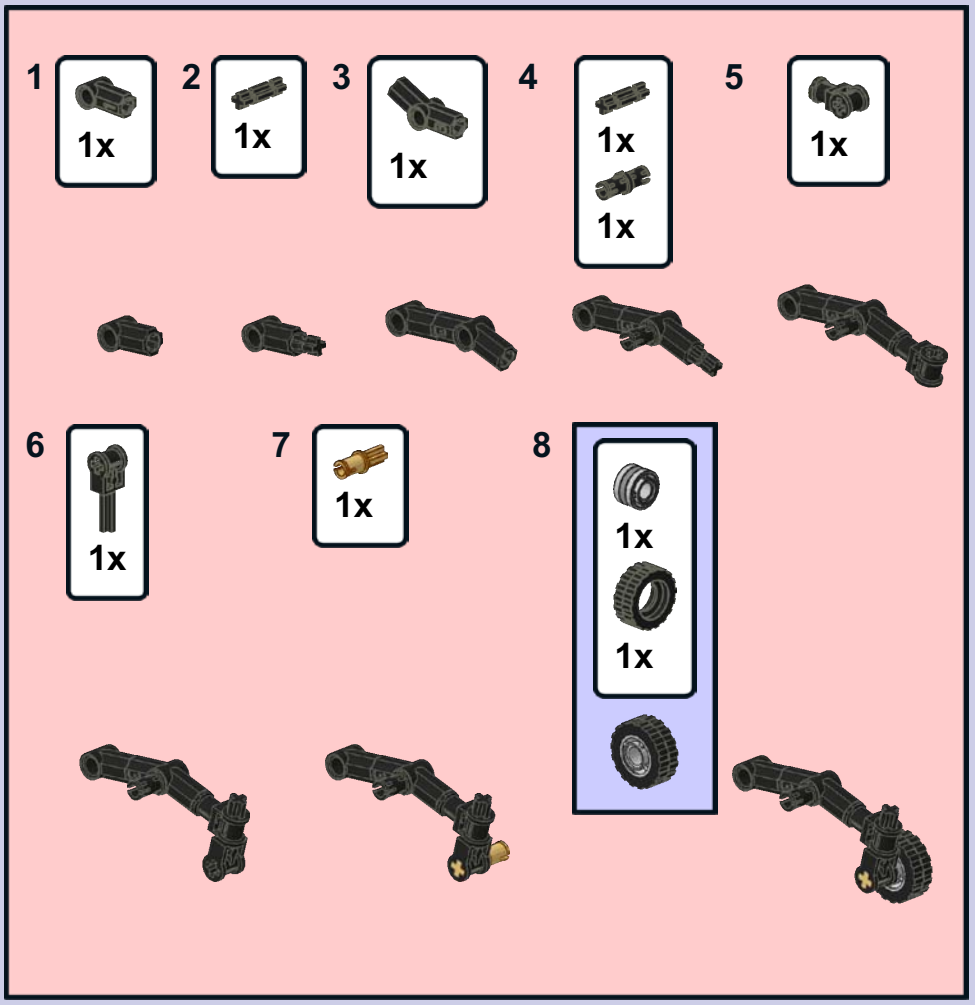

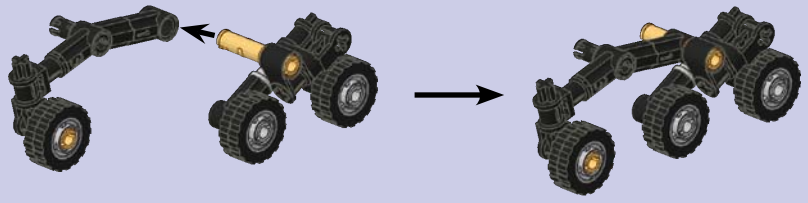

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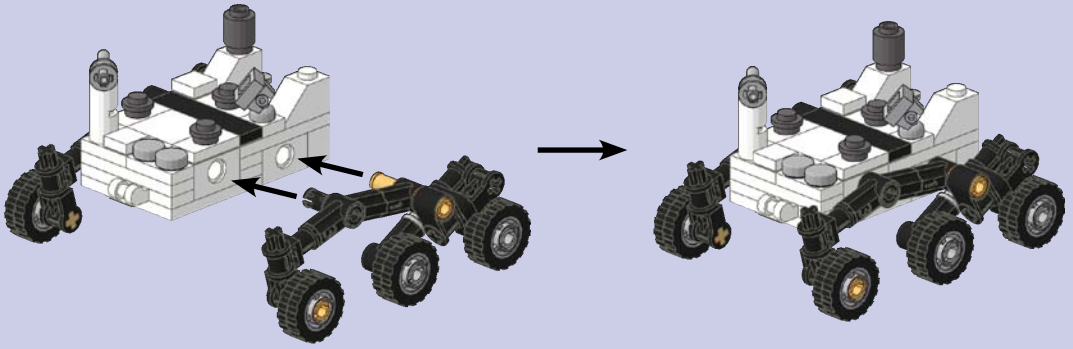

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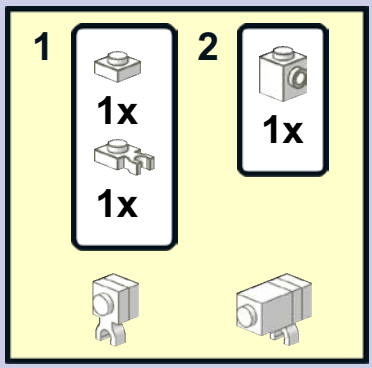

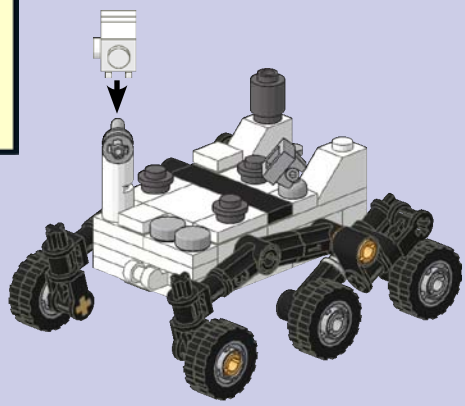

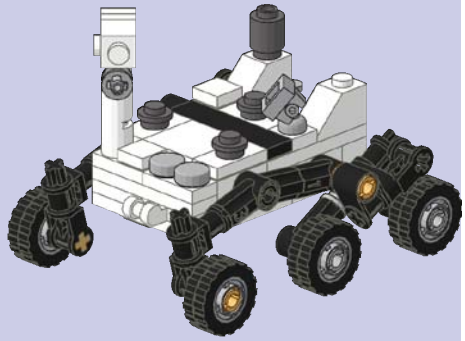

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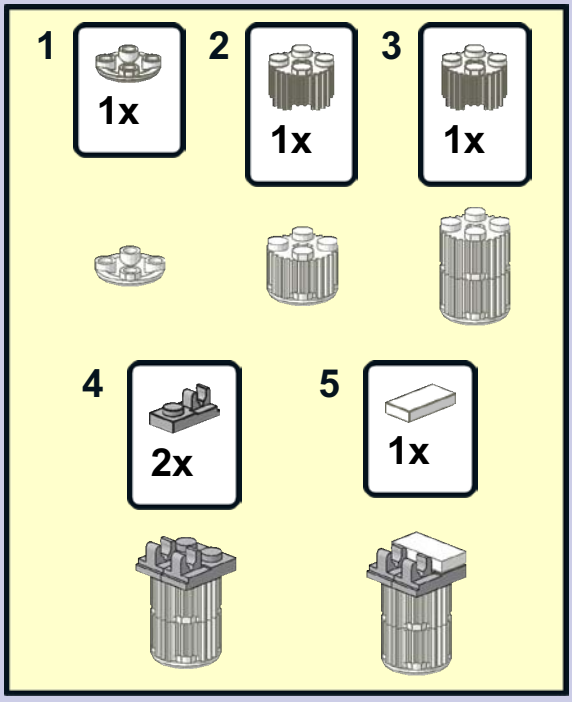

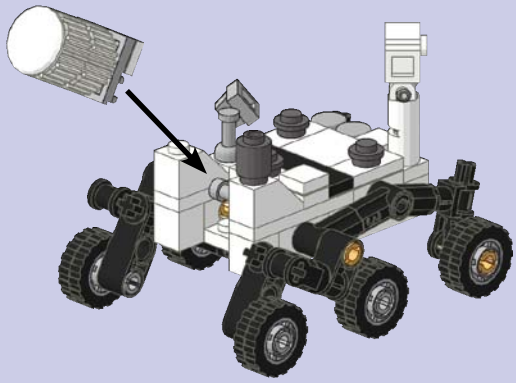

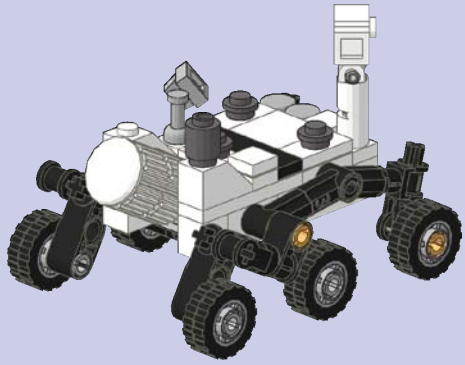

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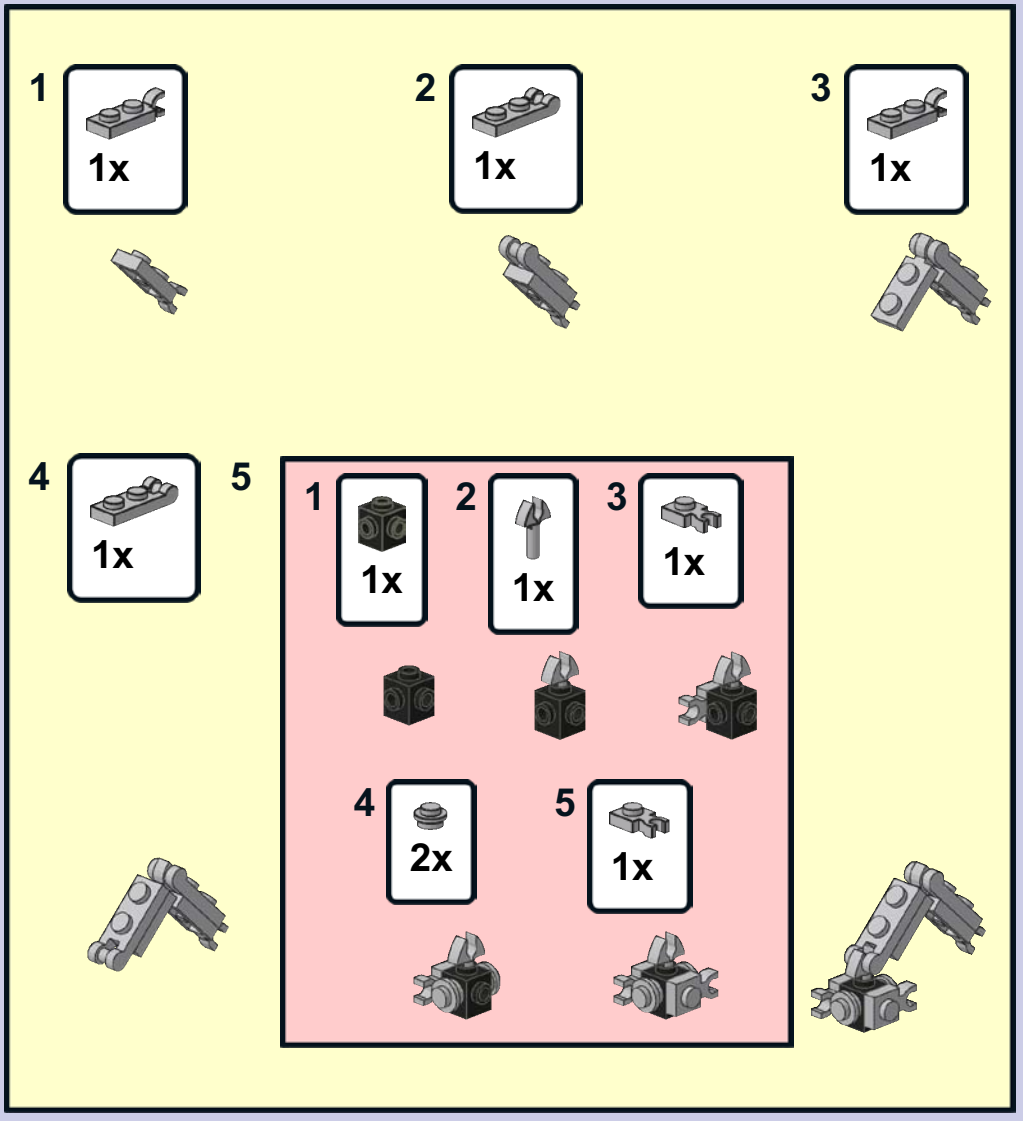
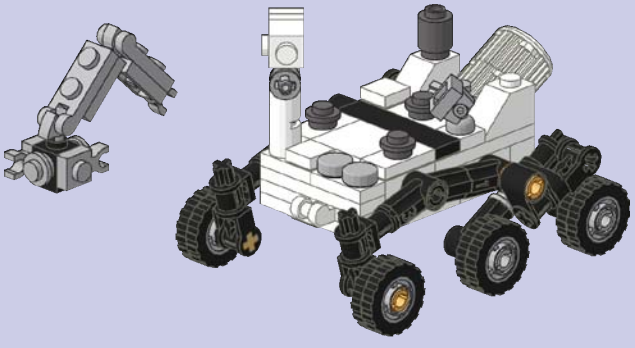
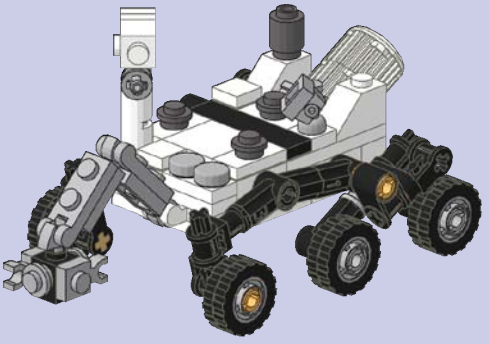
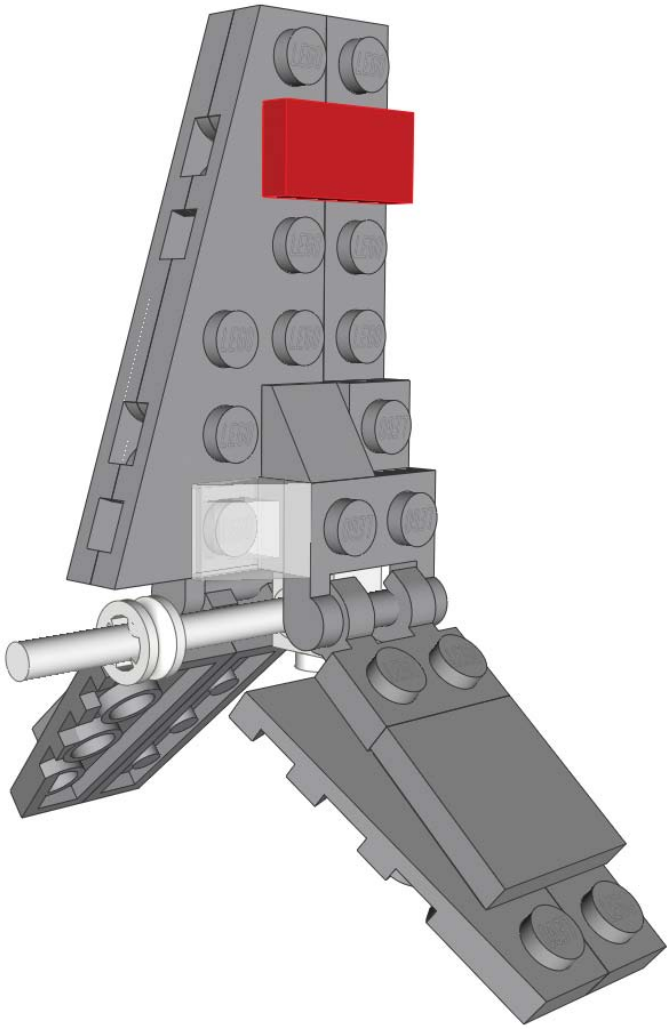






T-16 Skyhopper

Design and Instructions
by Christopher Deck



Hello everybody and welcome back to our ongoing series of mini model building in *BrickJournal*! This issue is about sky-fighting, which is why we want to build an air vehicle. This time, it's the popular T-16 Skyhopper as seen in *Star Wars Episode 4: A New Hope*, a small and maneuverable vehicle of tri-winged design. The mini model's construction is more complex than it seems, however. The main difficulty was to realize the windscreen on each side of the huge top fin, which divides it into two sections. A way to achieve this is to use two wedge plates in SNOT-alignment which allows us to attach two 1x1 slopes as a separate cockpit on each side. The next challenge was to keep those two wedge plates together as one wing. Another SNOT-trick with two headlight bricks helps here, which becomes clear when you will have a closer look at the instructions. A nice side-effect by using this second trick is that we have one stud on the underside as well for the attachment for the laser cannon. The attachment of a pair of side wings then completes the skyhopper and our model is finished!

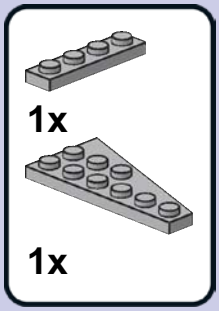
Happy building and see you next time!

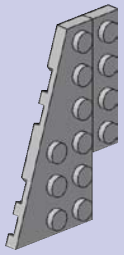
Yours, Christopher Deck

Parts List *(Parts can be ordered through Bricklink.com by searching by part number and color)*

Qty	Color	Part	Description
1	White	30374.dat	Bar 4L Light Sabre Blade
1	White	4070.dat	Brick 1 x 1 with Headlight
2	Light Bluish Gray	4070.dat	Brick 1 x 1 with Headlight
1	Light Bluish Gray	3023.dat	Plate 1 x 2
2	Light Bluish Gray	60470.dat	Plate 1 x 2 with 2 Clips Horizontal
2	Light Bluish Gray	48336.dat	Plate 1 x 2 with Handle Type 2
4	Light Bluish Gray	3710.dat	Plate 1 x 4
1	Light Bluish Gray	2420.dat	Plate 2 x 2 Corner
2	Trans-Clear	50746.dat	Slope Brick 31 1 x 1 x 2/3
2	Light Bluish Gray	50746.dat	Slope Brick 31 1 x 1 x 2/3
1	White	32123a.dat	Technic Bush 1/2 Smooth with Axle Hole Reduced
2	Red	3069b.dat	Tile 1 x 2 with Groove
2	Light Bluish Gray	3068b.dat	Tile 2 x 2 with Groove
1	Light Bluish Gray	41770.dat	Wing 2 x 4 Left
1	Light Bluish Gray	41769.dat	Wing 2 x 4 Right
1	Light Bluish Gray	54384.dat	Wing 3 x 6 Left
1	Light Bluish Gray	54383.dat	Wing 3 x 6 Right

1





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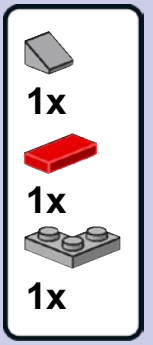

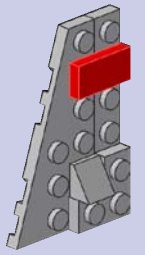

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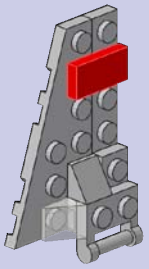

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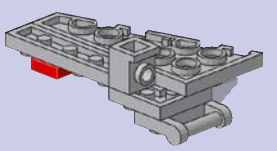

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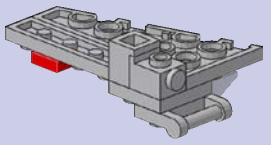

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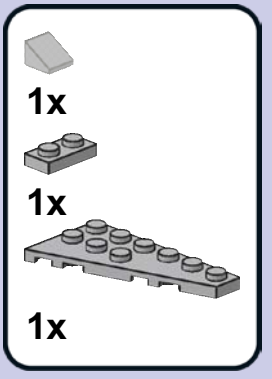

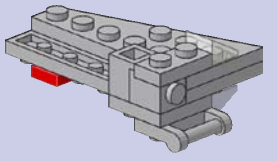

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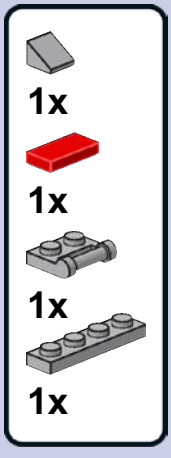

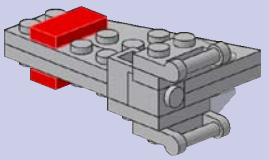

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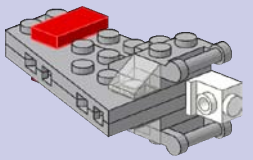

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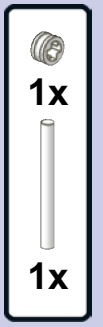

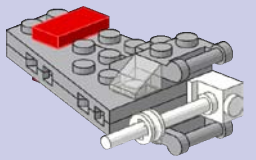

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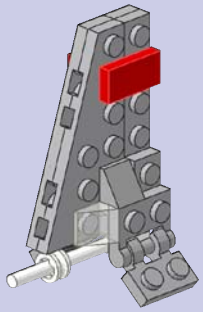

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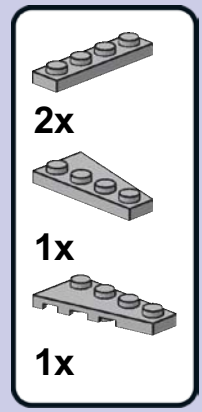

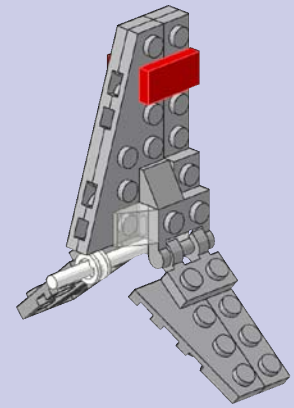

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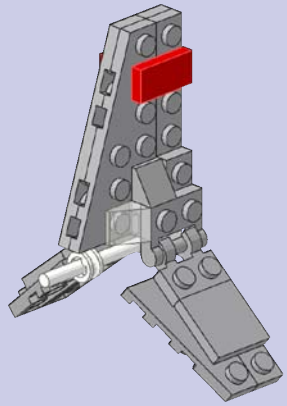


Minifig Customization 101: Fun With a Vacuum!

by Jared K. Burks

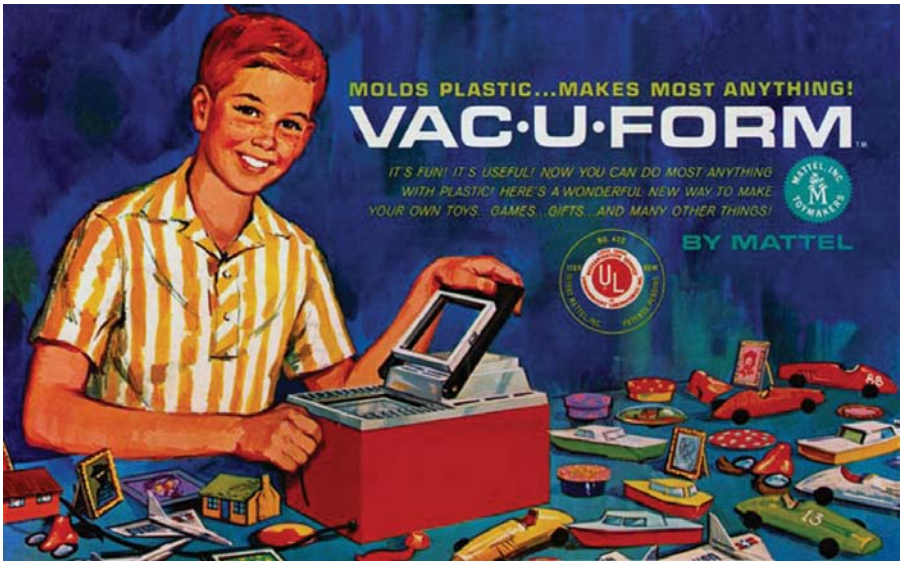


Figure 1. Mattel Vac-U-Form.

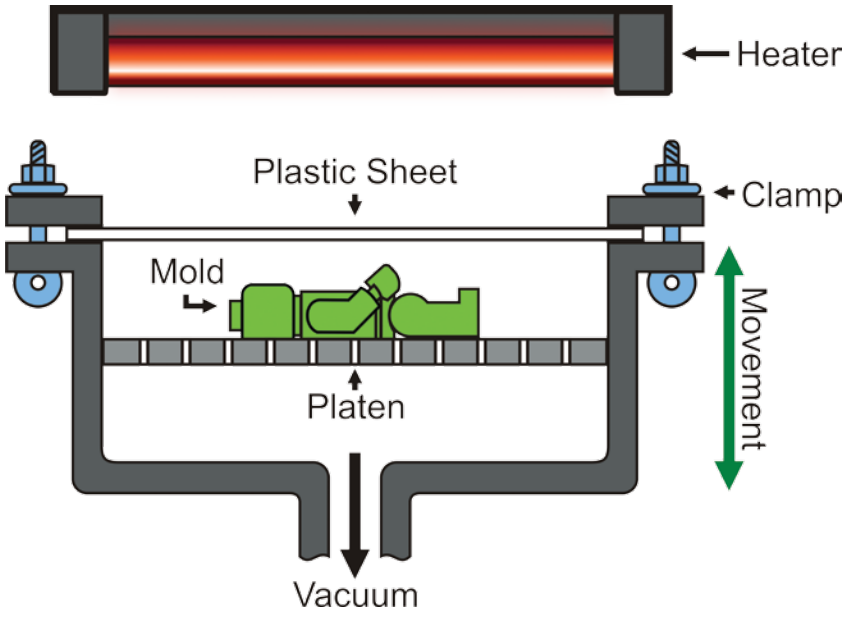


Figure 2. Plastic Forming Diagram.

The kids of the 1960s had it good! Yes, that statement sounds odd, but think about it for a second. In the early sixties LEGO came to America, which is cause enough to celebrate, but this isn't the only reason to think these kids had it good. The Mattel Corporation had a toy ahead of its time for this hobby: the Mattel Vac-U-Form. This was a simple vacuum former that allowed someone to head up a plastic sheet and then swivel it over on top of a mold and vacuum out the air with a simple hand pump, forming a new toy.

Using a vacuum former in the hobby of LEGO minifigure customizing has long been something I have wanted to try, but I was concerned about the level of vacuum pressure required. But I am getting ahead of myself. Before we stroll through the uses in minifigure customizing, let's roll through the basics of vacuum forming. Vacuum forming remains a popular deforming process where the vacuum removes the air underneath a soft and flexible thermoplastic sheet, creating pressure to pull the plastic onto a mold. The vacuum forming process starts by raising the plastic sheet towards a heater to soften the plastic before being pulled down onto the mold to create a draping form. The aim is always to create a high definition outcome without any excessive thinning of the plastic taking place. Vacuum forming is used to make many toy containers as well as several other commercial products.

To be honest with everyone, I am very excited about the content in this article and I must share the fact that I have not yet tried this technique, but can't wait to do so. Because I haven't tried it, I have reached out to an expert in vacuum forming, Jimmy "THE BOXMAN" Chavez. Jimmy is relatively new to LEGO customizing, but has been customizing in Hot Wheels for some time. For info on Jimmy please see his profile following this article.

For the remainder of the article, I have asked Jimmy to walk us through one of the cool uses of a vacuum former, beyond the use to create packaging. Clearly packaging would likely require a larger former than what would be used for creating small parts.

How To Vacuum Form Small Parts

There are a variety of ways to create small custom parts and accessories. However, after the initial purchase of a small dental vacuum form machine, this method is the most efficient and cost-effective in the long run. It is simple to redesign molds, and parts can be easily duplicated.

Materials:

- Small dental vacuum form machine
- Small utility knife
- Carving tools
- 5.5 x 5.5 15ml plastic
- Wood or high density foam
- Heavy duty silicon lubricant spray
- Emery board or sand paper (recommended 400 to 600 grid)
- Paints and/or water-slide decals

Figure 4. Needed materials.

Step One: Gather all the materials and equipment listed above, seen on Figure 4.

Step Two (Figure 5): Carve a mold out of the wood or high density foam. In this example, I use high density foam which I purchased through an online vendor. I use an emery board or sand paper to smooth out the edges and any fine tuning. It is important to minimize any undercuts which would make it more difficult to remove the mold from the cast.

Step Three: Spray the mold with a thin layer of Heavy duty silicon lubricant; this allows the mold to be easily released.

Step Four: Preheat dental vacuum form machine for three minutes.

Step Five: Place 5.5x5.5 15ml plastic into the dental vacuum form machine by securing into clamps.

Figure 5. Carved mold form.

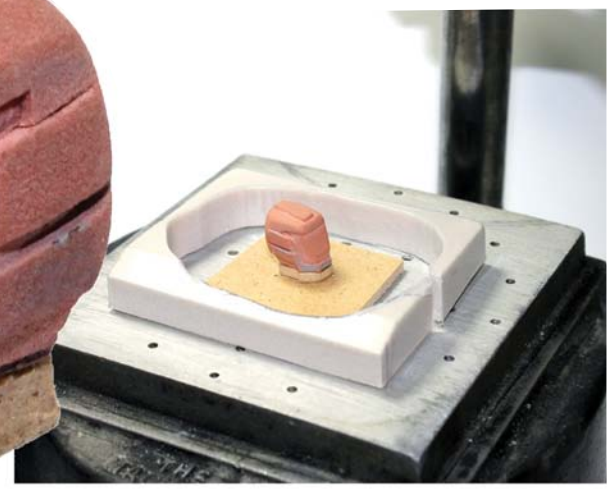


Figure 6. Mold placed in dental from machine.

Step Six (Figure 6): Put the mold onto the center of the vacuum surface. It may be necessary to surround your mold with a small barrier to prevent webbing (excess gathering of plastic). This can be easily made from scraps of wood.

Step Seven: Allow the apex of the plastic to droop. For this example, I let it drop an inch and a half. However, the length is dependent on the height of the mold; the taller the mold, the more it should droop.

Step Eight (Figure 7): Manually pull down on the handles of the dental vacuum form machine so that the plastic blankets over the mold. Then immediately turn on the vacuum.

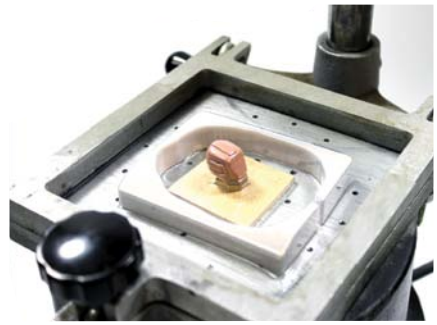


Figure 7. Mold placed in dental from machine.

Figure 8. Cast removed and customized.

Step Nine: Allow it to cool for one minute. Then carefully pry the mold loose from the cast.

Step Ten (Figure 8): Customize the cast with paints and/or add water-slide decals.

As you can see from this example, the vacuum former can create many items for the customized LEGO minifigure. I want to thank Jimmy for laying out the steps for us. I can't wait to get my hands on a vacuum former to start playing with this technique.

For those wanting to build a vacuum former, there are plenty of plans online for creating simple formers.

Make Magazine's *website is a great resource for these plans:*

http://makezine.com/images/store/Vacuumformer-lo.pdf

http://makeprojects.com/Project/Kitchen+Floor+Vacuum+Former/68/1

http://blog.makezine.com/2012/09/26/dirt-cheap-vacuum-former/

You can go to Jared's webpage by scanning this QR code!

Figure 9. Part added to minifigure.

Next Time:

Minifig Customization 101 – Customizing the Collectible Fig Series

Some samples of Jimmy's work.

BOXMAN designs

Profile: Jimmy "THE BOXMAN" Chavez

Article by Jared Burks
Photography provided by Jimmy Chavez

***BrickJournal:* Tell us about yourself.**
Jimmy Chavez: I am from California, married with two daughters and two grandkids. I am a self-employed package designer mostly for the toy industry, and I enjoy every type of toy collecting.

***BrickJournal:* How did you get into Hot Wheels customizing?**
Chavez: I was collecting Hot Wheels back in '96. Collecting treasure hunts was a great marketing idea to boost sales by Mattel. Hot Wheels were very elusive and I would have to pay secondary market price, as much $40 each to get one. With a limited budget I decided to trade my custom Hot Wheels for treasure hunts and to insure a trade, I put them back in the package, which enticed the dealers. Eventually I created a reputation for myself as "The Boxman," so much so that Mattel sought me out and offered me a position as a package designer for the Hot Wheels brand, which allowed me to expand my skills and knowledge of the toy packaging business. I created many designs for which I was able to obtain patents.

***BrickJournal:* How did this merge/morph into LEGO customizing?**
Chavez: After realizing that LEGO has a larger spectrum for package design than Hot Wheels, it was a no-brainer to start doing just that. So far I have designed four different concepts, but plan to have a lot more by end of the year.

***BrickJournal:* What attracted you to the LEGO minifigure?**
Chavez: The fact that they are mini. I tried designing some packages for a buddy's custom action figure. Designing an insert took more time than the outside blister, which took all the fun out of it; but minifigs are 100 times easier to do.

***BrickJournal:* What special tools do you use?**
Chavez: An X-acto knife, steel ruler, and a vacuum former.

***BrickJournal:* Are these things that a novice can try or do you need training?**
Chavez: Designing a paper box type package can be done with what most people have lying around the house, with very little skill.

***BrickJournal:* What is your favorite genre?**
Chavez: Superheroes!

***BrickJournal:* Do you create your box images or do you find your images?**
Chavez: Both!

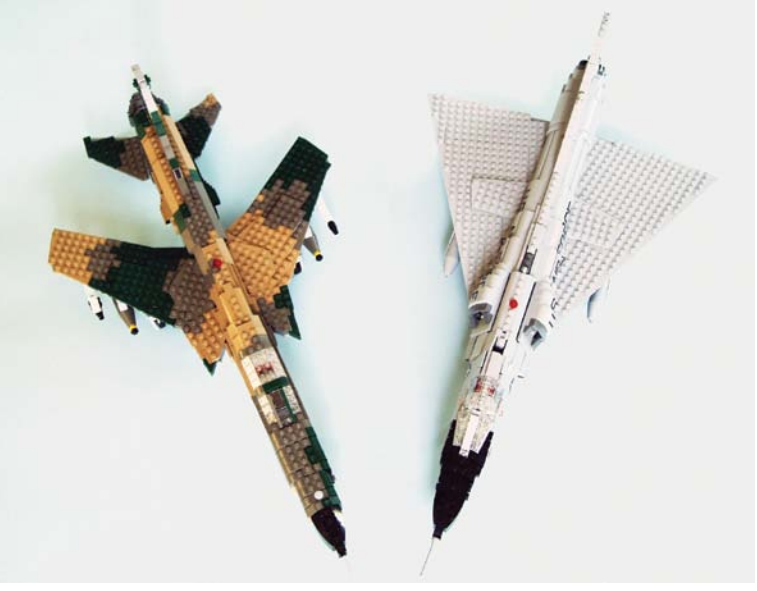
***BrickJournal:* What is your program of choice?**
Chavez: Adobe Photoshop.

***BrickJournal:* Walk us through a creation.**
Chavez: I start first with sketches, then a paper cutout put together with tape. If it looks like what I hope for, I will do a line drawing on the computer and then I start adding the graphics. When it's done I take a file to my local print shop where they will laser print it on cardstock paper. I then cut it out, fold, and maybe add a plastic window, which is very simple – done!

***BrickJournal:* Where can we see more of your work?**
Jimmy Chavez: http://boxmantoys.blogspot.com/

Century Fighters

Article and Photography by Ralph Savelsberg



The F-105 (left) and F-106 (right) showing their swept wings and their area-ruled fuselages.

The LEGO Group has a long-standing policy of not wanting to make war seem like child's play. I can completely understand their point of view, but it has not stopped me from building a large collection of military aircraft and helicopters using their products. I am fascinated by the technology that goes into military aircraft and they are exciting and challenging objects to build. In this article, I hope to give you some idea what makes building models of fighter jets interesting and fun, by explaining how I built two of them: the F-105 Thunderchief and the F-106 Delta Dart.

Most of my models represent aircraft from the end of the cold war, but the F-105 and F-106 are of a slightly older vintage. They entered service with the US Air Force in the late '50s and are part of a range of famous fighter aircraft known as the Century Fighters, named such because their numerical designations are in the 100-109 range. Aeronautical engineering progressed rapidly in the '40s and '50s. In 1947, the experimental rocket-powered Bell X-1 was the first aircraft to fly faster than the speed of sound. Only ten years later, Century Fighters were routinely flying supersonically, some even reaching more than twice the speed of sound. These high speeds required a range of innovations, such as large jet engines with afterburners and both the F-105 and F-106 were powered by the J-75 engine, one of the biggest jet engines available at the time. The high speeds also had an impact on the shape of the aircraft. Swept wings reduce supersonic drag, as does making the nose of the aircraft pointy. For low drag close to speed of sound, the cross-sectional area of the aircraft ought to change only gradually along its length. A consequence of this, the so-called area rule, is that the fuselage has to be narrower where the wings are attached to it, giving it a shape reminiscent of a Coca-Cola bottle, or perhaps fitting for the time, of Marilyn Monroe. These external features obviously have an impact on building the aircraft using LEGO elements.

Building the Thunderchief

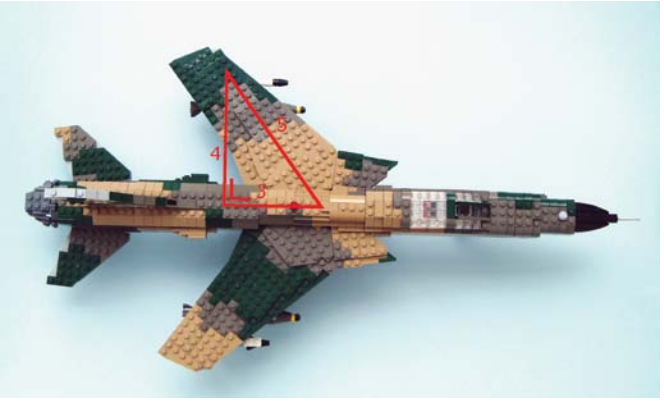
F-105s were originally designed to deliver a nuclear weapon, but instead they went into combat over the jungles of Southeast Asia, carrying conventional bombs. During the first few years of the war, they performed the majority of the USAF's dangerous bombing missions over North Vietnam, sustaining heavy losses in the process. Almost half the total production run was lost, mostly to anti-aircraft artillery. Enemy MiG-fighters also took their toll, but even though Thunderchiefs were ill-suited for air-to-air combat, they still managed to shoot down more than 20 MiGs. The aircraft I modelled represents one of the 'MiG-killers', which survived the war and in the late Seventies ended up flying with the Virginia Air National Guard.

I wanted to build an F-105 for years, but for a long time I could not work out how, for two reasons: the camouflage colors and the shape of the wings. The easiest way to build a swept-back wing is by building it perpendicular to the fuselage, with wedge plates (plates with a diagonal side) used for the leading and trailing edges. On the F-105 this was not really a viable option. The sweepback angle for the leading edges of the wings is almost 45 degrees, which may seem convenient as there are wedge plates with 45 degree corners. However, the angle of trailing edge does not match any LEGO wedge plates. Furthermore, the main legs of the undercarriage fold into the wings and they are not perpendicular to the fuselage when retracted. I solved all of this using a bit of mathematics called a Pythagorean triple. If you make a right-angled triangle with sides whose lengths are three and four studs long, the diagonal will be exactly five studs long. The wings on my model slot into a gap between the upper and lower sections of the fuselage, and by placing the studs that hold them in place so that they formed such triangles, I ended up with just about the

The F-105 seen from below, with one wheel extended and one wheel retracted, showing how the undercarriage legs retract into the wings at an angle.

perfect angle for the trailing edge and for the undercarriage. Using 2x4 wedge plates I could also get the leading edge just right. The Thunderchief's unique forward-swept wing-root intakes were mounted at an angle of 45 degrees relative to the wing using 45 degree wedge plates. This gave them the proper angle relative to the fuselage as well. Once I had the basic idea for the geometry, it all came together quite quickly.

When first delivered, Thunderchiefs were silver-colored, but to make them less conspicuous flying above the jungle, the USAF decided to apply camouflage to the aircraft. Building camouflage may seem easy, but if you just jumble the different colors together at random, it will end up looking like a mess. Real-world camouflage usually consists of largish patches in the same color, which requires color-coordinating adjacent parts. The closest matches in The LEGO Group's color palette I could find are old dark grey, dark green and dark tan. If you have ever built anything using the latter two colors, you will know that there is little variety in the parts you can get in those colors. Getting it all to work was a bit of a puzzle, but it all worked out.

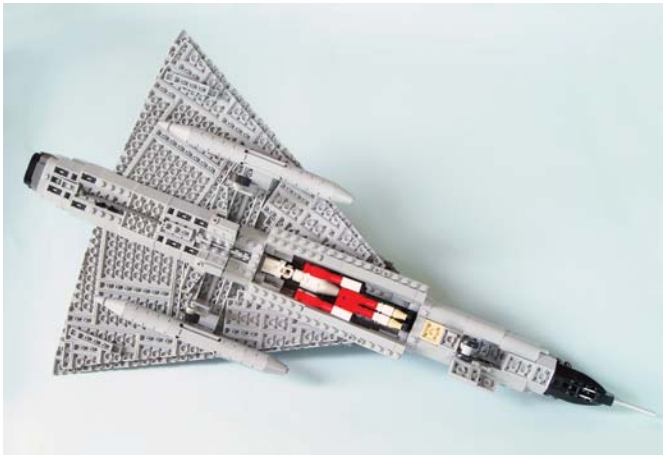


The wings are mounted at an angle using a right-angled triangle with ratios 3 to 4 to 5, a Pythagorean triple.

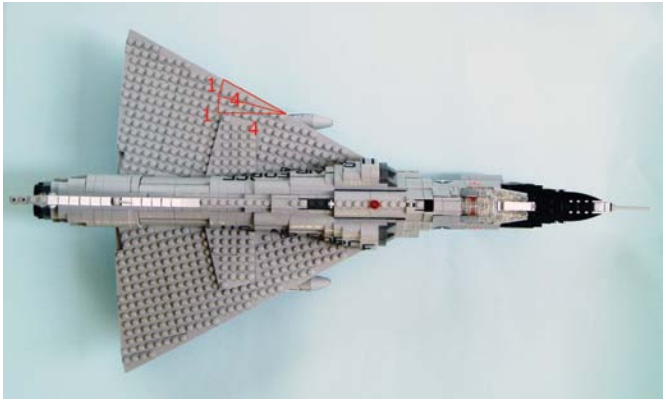
Building the Delta Dart

Like the F-105, the F-106 Delta Dart was intended for use in a nuclear conflict with the Soviet Union, albeit in a different role. It was an interceptor, designed to defend US airspace against Soviet bombers. F-106s were stationed at airfields throughout the US, ready to take-off at a moment's notice. My model represents an aircraft that flew from Langley AFB in Virginia with the 48th Fighter Interceptor Squadron, in the late '70s and early '80s. The F-106 carried four Falcon air-to-air missiles and a single Genie missile in an internal weapons bay, to reduce drag. It may seem almost crazy to us now, but the Genie had a nuclear warhead. It would be launched at an enemy bomber formation from a few miles away, after which the nuclear explosion was supposed to destroy any bombers within a 1000 ft. radius.

Getting the bomb-bay doors to work on the model was a challenge. A prominent feature of the jet – sufficiently prominent to be part of the name – is the large delta-wing. There are no LEGO wedge plates with the proper angle for its leading and trailing edges and because of this, I once again angled the whole wing. The angle was set by combining two 2x4 stud wedge plates, which are connected using plate hinges. Unlike that of the F-105, when retracted, the Delta Dart's undercarriage lies in the wing perpendicular to the fuselage. Obviously, that is hard to incorporate in a wing that is built at an angle. I ended up building a box through the wing perpendicular to the fuselage to hold the undercarriage, with the angled section more-or-less wrapped around it. The box does stick out of the top of the wing a bit, but there are no awkward gaps and the undercarriage can be retracted without problems. The forward fuselage was also a challenge. The cross-section of the fuselage near the cockpit is more-or-less triangular, but the nose is round, with a difficult transition in between. The windscreen was tricky too, because it consists of two triangles. Until about a year ago, I used non-LEGO flexible plastic for the cockpit canopies of my aircraft. That would have been very easy to do for this canopy, but lately I have been building them out of transparent LEGO-elements instead.



The F-106's armament was housed in an internal weapons bay. The weapons can be retracted and extended and the doors can be closed.



The F-106's wing was also built at an odd angle relative to the fuselage. Only the box that holds the undercarriage is built perpendicular to the fuselage.

I built two transparent triangles using plates and cheese slopes (31 degree slopes) and attached them to taps using two clips. This allowed me to angle them properly. The gap between them in the middle was covered by a tile hinged at the front of the windscreen. Getting all of this to fit properly took a fair bit of trial-and-error.

In the '50s, Century Fighters represented the pinnacle of aeronautical technology and in my opinion they still look futuristic today. A few years ago I could not have built them. A lot of new parts have been introduced in recent years, such as curved slopes that are perfect for the pointy noses of these jets, but LEGO elements are mostly rectangular and their studs are placed on a rectangular grid. There is a wide variety of wedge plates and these are often enough to get the shape of the wings right. The wing shapes of the Century Fighters, however, required that I deviated from the rectangular grid and built things at different angles. The combination of digging deep into my bag of tricks and the new parts made it possible. LEGO elements may be a child's toy, but building these models wasn't child's play. It was plenty of fun though!

Ralph Savelsberg is a physicist from the Netherlands.
For more pictures of his models, visit *http://www.flickr.com/photos/madphysicist/* or scan the QR code on the left!

Sky-Fi:

Building in the Aerial Universe of *Crimson Skies*® and Dieselpunk

Article by Fradel Gonzales

Photography provided by Fradel Gonzales, Jon Hall, Theodore Sammis II, Chris Paton, Chris Giddens, Mark Sandlin, Gil Shaw, Nick Kappatos, Adrian Drake, sydag, Leigh Holcombe, tbone_tbl, and Fredoichi.

Above: A sky-fi model by Fradel Gonzales.

Beginning a Theme: Influences

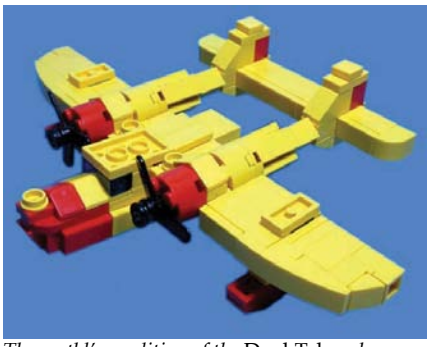
Manned flight has captivated the dreams and imaginations of young minds for countless generations. As children, we watched air shows and were awed by the aerial stunts, the planes, and the possibilities. It was only natural that the creative talents of many an AFOL would harness this fascination and combine them to make exceptional aerial MOCs, especially from the Spacer group of the AFOL community.

By late 2003, builders started creating MOCs inspired from a resurrected board game from the late '90s called *Crimson Skies*. The game was the creation of Jordan Weisman, the game maker from FASA Corporation that had also brought the franchise *Battletech*® to the gaming world in the mid '80s. In 2003, the game garnered a resurgence and following when Microsoft put out an action flight game version of *Crimson Skies* for the Xbox and PC gaming systems.

Crimson Skies is an alternate history setting in the 1930s where air pirates, militias, and corporations vie for control of the skies over a fractured political landscape of the shattered United Stations in the post-Depression 1937. This game was made famous not just for the amazing backstory, but also because of the radical aircraft designs.

Examples of these unorthodox designs were flying wings, pusher propeller-driven aircraft, gyrocopters, and Zeppelin aircraft carriers. Just imagine if the experimental planes that the United States and Germany had been working on in the '40s like the Vought V-173 (Flying Pancake) and the flying wing seen in *Raiders of the Lost Ark* had made it into widespread production. The weaponry was also comprised of experimental technology considered advanced in that era like Tesla cannons, aerial torpedoes and homing rockets.

Left: Renders of Crimson Skies *aircraft.*
Top: Devastator.
Bottom:: Kestrel.



Tbone_tbl's rendition of the DuckTales *planes, the* Sea Duck *(left) and Don Carnage's plane (right).*

Even before *Crimson Skies,* there was a Disney animated series called *Tailspin.* This show took characters from the movie *Jungle Book* and placed the characters in a fictional setting in the South Pacific. It took its cues from yet another television show, *Tales of the Gold Monkey,* about a bush pilot and ex-Flying Tiger (coincidentally a plot point shared by Jude Law's character in *Sky Captain*). The plots were very film noir and incorporated elements like a pilot's love for his aircraft, romance, dealing with bandits and sky pirates, and just trying to keep their air services afloat. Both shows also showcased a seaplane as the protagonist's sky chariot.

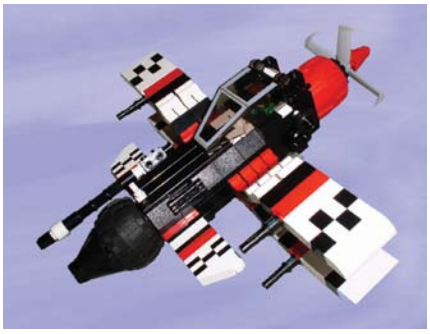
Sydag's version of the Sea Duck.

Other influences to the genre lay in Japanese animation. Several anime movies and television shows gave examples and inspiration for diesel punk. Studio Ghibli movies like *Kiki's Delivery Service* and *Porco Rosso* each gave examples of interesting flying designs. Other anime like *Last Exile* broke with traditional winged diesel punk by having wingless flight craft, yet still maintained the grungy industrial retro-future look. More examples of pusher-prop war birds and alternate history development were from movies like *Sky Crawlers* and *Royal Wings of Honneamise.*

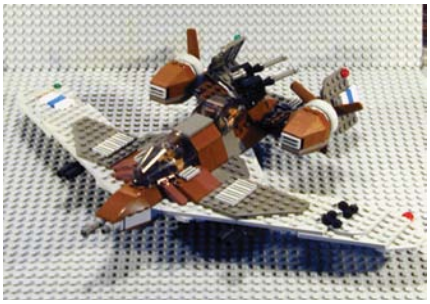
Sydag's version of the Savoia S21 *plane.*

Jon Hall's model of the Savoia S21 *plane from the film* Porco Rosso *(above) and Nausicaä's "Mehve" Glider (left) from* Nausicaä of the Valley of Wind.

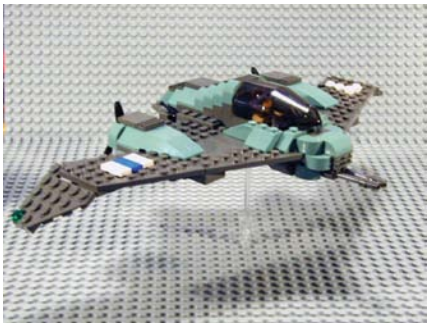
Plane by Theodore Sammis II.



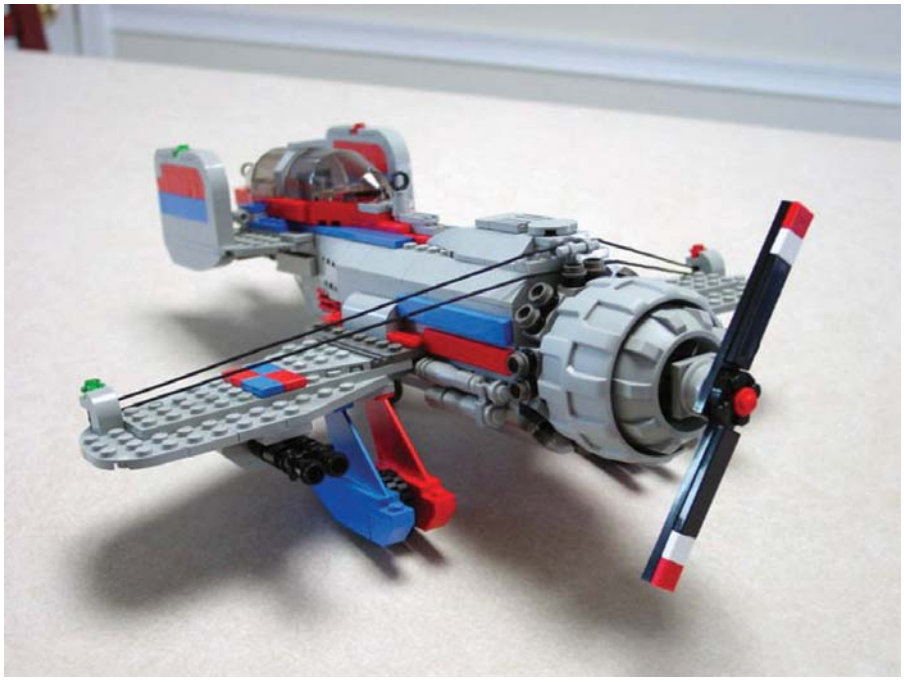
Another by Chris Paton.



Mark Sandlin's Boeing Syndicate BC-4.



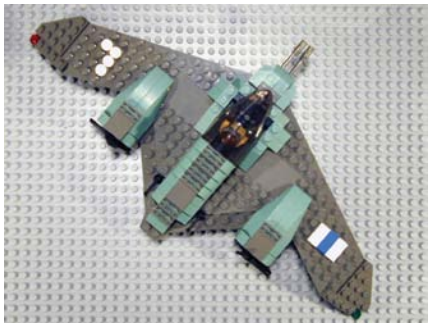
Sandlin's BC-3.

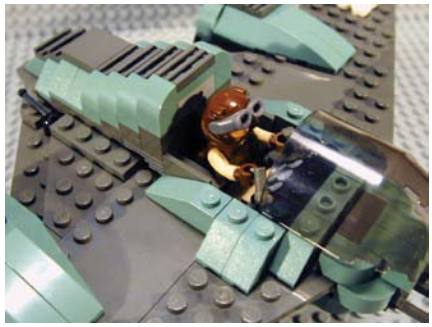


Chris Giddens' Bobcat.

First Generation

In the fall of 2003, the first *Crimson Skies* MOCs were hitting the LUGNET website. Major builders Mark Sandlin, Chris Giddens, Trevor Pruden, Gil Shaw and Jaime Neufield all hit the genre hard and heavy. There were other newcomers like the late Travis Kunce, Chris Paton, and Theodore Sammis II. Several builders would join the fray over the next few years, and the MOCs that were churned out were pretty impressive.





It was around this time that I also threw my hat into the ring. My own four original warbirds were typical of that era. I made a pusher prop design, one similar to a P-40, one with exaggerated canards and with props mounted on in addition to a main forward prop. I even made a dual-seater flying wing. They would not stand the test of time and I decided to update them as best I could over the years – I will revisit that idea later. Mind you, in 2003-2004, SNOT techniques that were still being experimented with Space builders were already common to train builders.

Many *Crimson Skies* builds at the time still maintained a studs-up percentage while incorporating the newer SNOT techniques. One thing that helped perpetuate warbird construction in the genre was the second generation of *Star Wars* sets. The *Attack of the Clones* sets gave us curved slopes, modified slopes, new wedge plates and bricks, and last but not least, the Jedi Starfighter (JSF)/ Gunship canopies, which were essential to many MOCs. The previous *Star Wars* sets had already given us the A/B-wing and X-Wing snowspeeder canopies.

Nick Kappatos' Laramie B122.

Jamie Neufeld's Macchi S-42 Canard Float Plane.

Gil Shaw's Guardian.

Jamie Neufeld's Aimes AeroCorp Gyroplane.

Tbone_tbl's LM-Alpaca.

Building Big

By 2005 and 2006, I had already made revisions to my four warbirds. This is not an unheard of thing to do in the builder genre. In fact, builders like Jamie Neufield and Theodore Sammis II had already been revising their birds a few years before. By 2006, Adrian Drake tried something never before attempted, but as his want, he made something huge. He also took part in the alternate history part of the genre and made a zeppelin hybrid heli-carrier in time for unveiling at Brickfest 2006, called the *Thomas E Dewey*. The *Dewey* was named for the real-world, presidential rival of Truman in the 1948 election. The *Dewey* served as a sky carrier for its complement of Cardinal fighter craft.

Various views of Adrian Drake's Thomas E. Dewey.

Various views of Adrian Drake's Cardinal.

Building Small

Jumping to the later portion of the first decade of the new millennium, builders have come and gone. LUGNET and Classic-space.com are no longer the main hubs for Spacers to converge and mingle on cyberspace. On Flickr we see new builders emerge and take on the mantle of genre building from AFOLs no longer active. Builders like Jon Hall came out of nowhere and surprised us all with his amazing air armada of Sky-Fi MOCs.

Jon Hall created his own dieselpunk alternate history universe so he would not be limited to real-world comparisons or offending anyone with historical sensibilities. Another builder by the Internet handle "Fredoichi" joined in on the Sky-Fi verse but with warbirds built in microscale. Fredoichi, much like me, and other builders in the genre took a liking to giving their planes a back story and identity similar to the fighter and bomber jocks of WWI and WWII.

There are other builders in the genre like Leigh Holcombe and Sydag (Flickr handle) who have built diesel punk as well as real-world warbirds. Their designs also range from minifig-piloted to micro scale. A friend and fellow SANDlug member, Cole Martin, also shares my enthusiasm for the genre and is even featured with his own article in this magazine.

Fredoichi's Bekkōbachi 5D Zero.

Fredoichi's Bekkōbachi Zero.

Fredoichi's Tsubame Zero.

Fredoichi's Sēka Zero.

Fredoichi's Niningumi Zero.

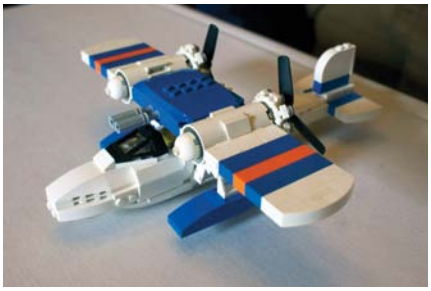
Fredoichi's Karibachi San Zero.

Leigh Holcombe's Pacifico TT-90.

Leigh Holcombe's Pacifico TT-32.

Fradel Gonzales' beginning Sky-Fi models...

...and his recent models.



Building On

It has been almost a decade since I have seen the first *Crimson Skies*-inspired MOCs and the fascination has never grown old. I still have many ideas I would like to try on my next build. The best part of creating alternate technology / historical MOCs is that no one can tell you that you are not building something correctly, because you are not replicating something that exists. So long as you do some basic research of what would look plausible, you could make whatever type of aircraft you want. The increase of parts diversity, colors, and SNOT techniques will also insure that diesel punk MOCs will continue to soar, well into the future. After all, with LEGO, the sky's the limit!

Cole Martin: Sky-Flyer!

Article by Joe Meno
Photography provided by the LEGO Group

Sometimes builders have to be found. This was the case with Cole Martin, an AFOL who lives in California. I first met him a couple of years ago at a San Diego LEGO Users Group (SANDLUG) meeting while I was in town attending Comic-Con International: San Diego. At that time, Cole was just starting to build MOCs and already had an eye toward building hot-rodded vehicles.

I saw him again at a meeting in 2012, and not only had his building skills jumped, he had found a theme he wanted to build in. After seeing two of his models, it was apparent that he had some great MOCs, and so I talked to him about building Sky-Fi models. Some of those models are highlighted in this article.

***BrickJournal:* What do you do now?**
Cole Martin: I am currently working in the aerospace industry as a welder.

***BrickJournal:* When did you start LEGO building, and when did you begin building sky-fi models?**
Cole: I started building LEGO when I was about 4 years old, and began sky-fi in 2008.

***BrickJournal:* What inspires you to build? Who inspires you to build?**
Cole: My first inspiration originally came from a video game from the X-box game system called *Crimson Skies*. If I had to point to one person who has influenced me the most in sky-fi aircraft, it would be Jon Hall18 on Flickr, from London, England.

***BrickJournal:* How do you build a model? Do you sketch it out beforehand or just build it?**
Cole: When I get an idea for a model, I will usually sketch it first to get all the details down on paper. Then I like to take those shapes I have and apply them to the LEGO system.

***BrickJournal:* How long does it take to build a model?**
Cole: Well, it takes me a long time I think compared to most adult builders because in-between models I take long breaks of not building anything. This attributes to forgetting things to where I have this constant re-learning curve going on. It varies from one week, to two months being the longest.

***BrickJournal:* What's the best part of building? What's the hardest part of building?**
Cole: The best part of building is to me the finished product. We're able to transfer our ideas from our minds to the LEGO medium, and in turn the finished model displays that original idea. So you can actually see visually what I was thinking.

The hardest part of building to me is the brainstorming and figuring out the techniques to use to achieve the angles I want. And this is very difficult at times because of the LEGO itself. Sometimes they just don't make the part you want or need, so you have to compromise.

***BrickJournal:* What is your favorite model you have built, and what is your favorite LEGO set?**
Cole: My personal favorite is a plane I did that I called *Strato Magnetto*. It's the dark red aircraft shown in this article. My favorite LEGO set was the recent Space Police set called *Smash 'n' Grab*. It made me laugh in the store when I saw it! Real space criminals, stealing an ATM. Yes! Epic!

***BrickJournal:* What are you planning to build in the future?**
Cole: I am planning on continuing a theme I started a while back I call Sky Skulls. It consists of dark red, black, and white aircraft. I am working on and sketching an interceptor aircraft at the time of this issue. I may do some mercenary planes in the future as well. We'll see.

Cole Martin's Aircraft Brief:

Purple Pirahna

The next four aircraft are example of Cole's work. He was gracious enough to take some time to describe each plane for BrickJournal:

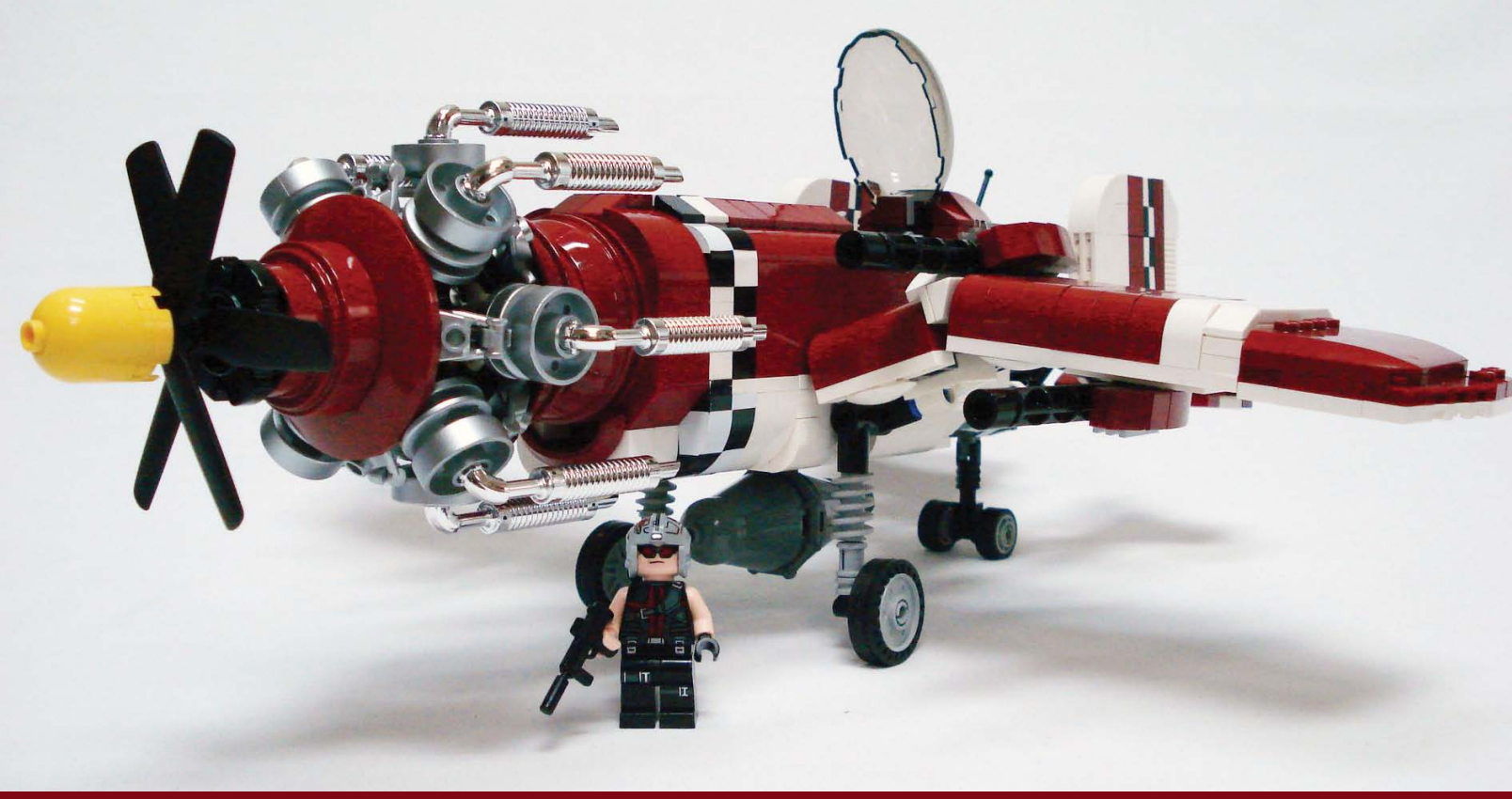
The *Purple Piranha* is an aircraft fitted with pontoons, or floats, often referred to as a floatplane, for being specifically aquatic or water-based. This plane also has what is considered to be a runway kit which allows it to make landings on land as well as water. This plane has more to it than meets the eye, as it has a secret cargo compartment located in the center of the fuselage (or body) and has a small compartment located just behind the pilot's chair as well. I built this plane using purple because there aren't as many parts or elements in LEGO's color palette molded in purple. In other words there aren't as many elements in purple as red or yellow that most people might have. I wanted a challenge, and also wanted a color that could be identified with a female pilot. A female smuggler has to have a super hot-looking plane! She needed to have a big, hot-rodded, exposed radial engine too. I think she'll get plenty of unwanted attention at the air shows! She is, after all, a smuggler.

Cole Martin's Aircraft Brief:

Rapid Transit

High-Speed Transport

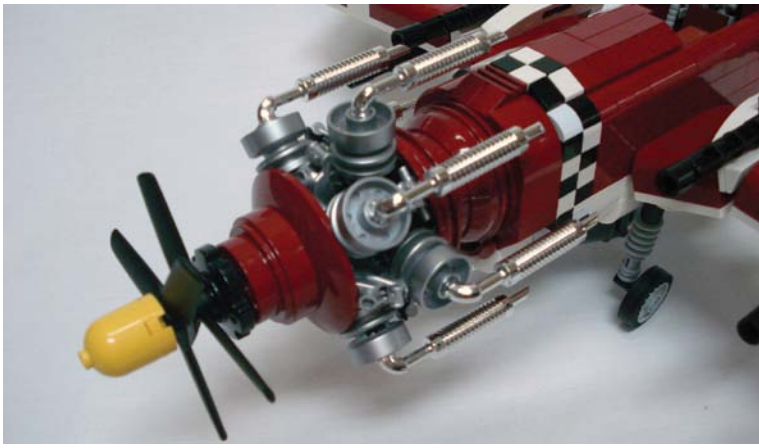
Rapid Transit (a.k.a. *The Smuggler*) is inspired by the Gee Bee racing aircraft of the '30s and '40s. This plane has wheel skirts, huge radial engine and a big smuggling compartment in the center of the fuselage, which took me hours to figure out. I don't recommend trying it. It was just plain hard to do because of how it recesses snugly into the top of the plane. This is definitely not your average grocery getter! But hey, even smugglers gotta eat, when they're not running from the cops!



Cole Martin's Aircraft Brief:

Stratto Magnetto

Fighter Plane



The *Stratto Magnetto* is an aircraft that is loosely based on an aircraft from the *Crimson Skies* video game called the *Briggand*.

I wanted an aircraft with an inverted gull-wing appearance, like the *Briggand*, but without the rear-facing defensive gun turret.

I needed to have a single-seat, "naked" radial-engined, twin-rudder aircraft. I like to use the twin tail fin configuration with fighter planes because I think it looks menacing and tough, as well as differing from the traditional single tail configuration of most combat aircraft I have seen. When I build aircraft, I want them to look radical, hot-rodded, tough and menacing – suitable for a sky pirate or outlaw. For this build I used the Hero Factory® ball and socket elements for my tail flaps and rudder assemblies. It's difficult sometimes to adapt these elements with the regular LEGO system parts, so I gave it a try and this time it came out well, I think.

You Can Build It

Sky-Fi MINI Model

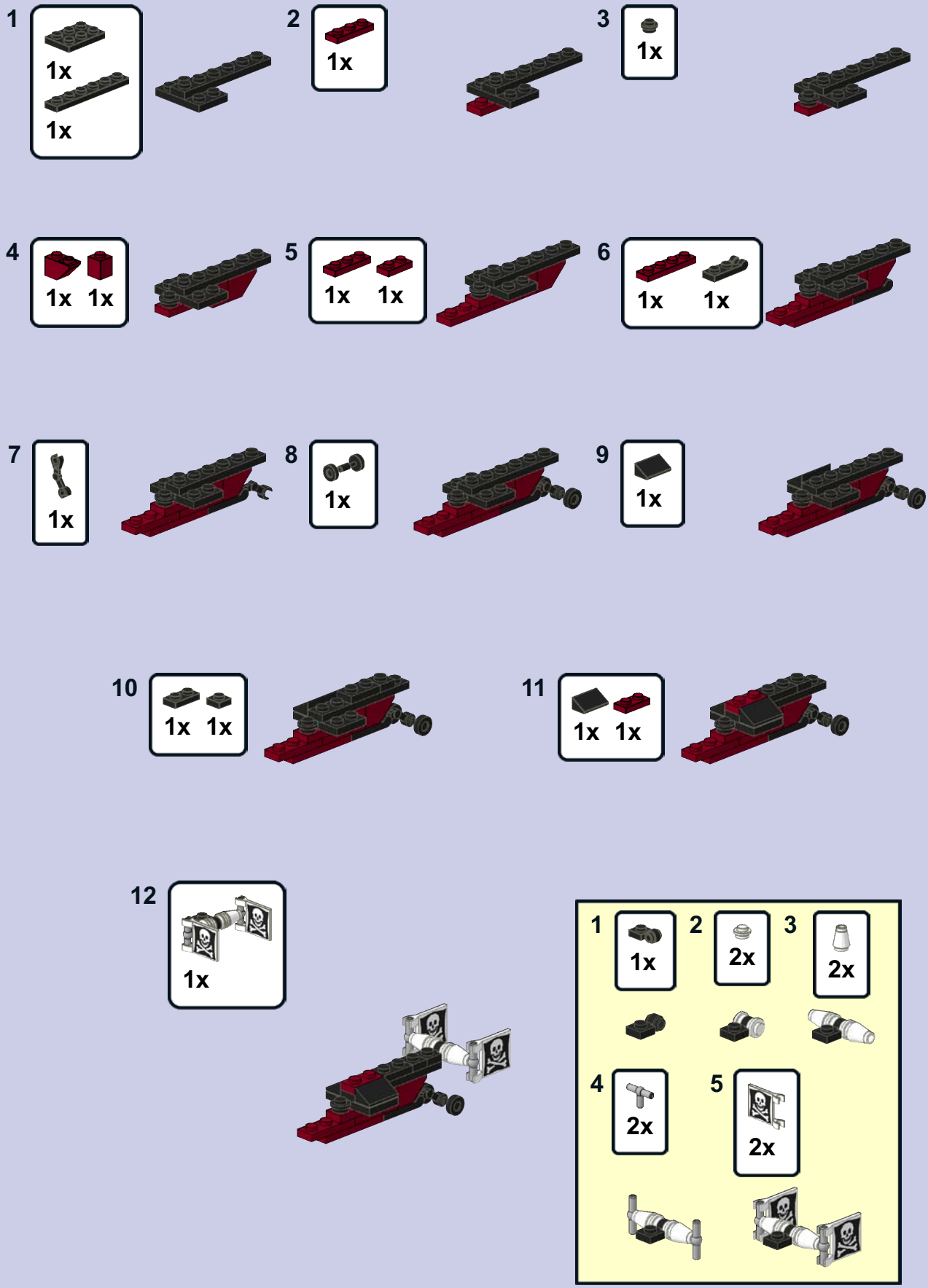
Modular Pirate Interceptor

Design by Cole Martin
Instructions by Joe Meno

Cole Martin designed this micro sky-fi model and talks about it: "I wanted to do something small and cool that kids mostly and adults could have a lot of fun with. I build mostly minifig scale, and consider myself to be not as good at building the really small stuff. I leave the small stuff to folks like my friend Matt Armstrong, a.k.a. Monsterbrick on Flikr (last seen in *BrickJournal* #21), and Fradel Gonsales, a.k.a. slice151 (seen in this issue). But this particular plane was lots of fun to do and included my signature design cues you'd find in my bigger models – split tail, big engine, and reeking of speed and havoc!"

Parts List *(Parts can be ordered through Bricklink.com by searching by part number and color)*

Qty	Color	Part	Description
2	White	2335p30.dat	Flag 2 x 2 with Jolly Roger Pattern
2	White	2420.dat	Plate 2 x 2 Corner
4	Black	2420.dat	Plate 2 x 2 Corner
2	Black	2444.dat	Plate 2 x 2 with Hole
1	Black	2496.dat	Wheel Trolley
2	Black	2540.dat	Plate 1 x 2 with Handle
2	Dark Red	3021.dat	Plate 2 x 3
1	Black	3021.dat	Plate 2 x 3
2	Dark Red	3023.dat	Plate 1 x 2
1	Black	3023.dat	Plate 1 x 2
4	Black	3024.dat	Plate 1 x 1
2	Black	3069b.dat	Tile 1 x 2 with Groove
2	Black	3139.dat	Tyre 4/80 x 8 Single Smooth Type 1
2	Light Bluish Gray	3464.dat	Wheel Centre with Stub Axles
2	Dark Red	3623.dat	Plate 1 x 3
2	Black	3623.dat	Plate 1 x 3
1	Dark Red	3665.dat	Slope Brick 45 2 x 1 Inverted
2	White	3665.dat	Slope Brick 45 2 x 1 Inverted
1	Black	3666.dat	Plate 1 x 6
1	Light Bluish Gray	3673.dat	Technic Pin
2	Dark Red	3710.dat	Plate 1 x 4
1	Black	3710.dat	Plate 1 x 4
3	Black	4081b.dat	Plate 1 x 1 with Clip Light Type 2
2	Black	4150.dat	Tile 2 x 2 Round
2	Light Bluish Gray	4274.dat	Technic Pin 1/2
1	Black	4617b.dat	Propeller 3 Blade 5.5 Diameter with Technic Peghole
2	Light Bluish Gray	4697b.dat	Technic Pneumatic T-Piece - Type 2
5	Metallic Silver	6141.dat	Plate 1 x 1 Round
2	White	6141.dat	Plate 1 x 1 Round
5	Black	6141.dat	Plate 1 x 1 Round
1	Black	6541.dat	Technic Brick 1 x 1 with Hole
1	Black	30039.dat	Tile 1 x 1 with Groove
1	Dark Red	30071.dat	Brick 1 x 1
1	Black	30071.dat	Brick 1 x 1
1	Metallic Silver	30244.dat	Tile 1 x 2 Grille with Groove
1	Black	30377.dat	Minifig Mechanical Arm
2	White	43722.dat	Wing 2 x 3 Right
2	White	43723.dat	Wing 2 x 3 Left
2	Black	44676.dat	Flag 2 x 2 Trapezoid
2	Dark Red	45677.dat	Wedge 4 x 4 x 0.667 Curved
1	Black	47905.dat	Brick 1 x 1 with Studs on Two Opposite Sides
1	Black	52107.dat	Brick 1 x 2 with Studs on Sides
9	Black	54200.dat	Slope Brick 31 1 x 1 x 2/3
6	Metallic Silver	59900.dat	Cone 1 x 1 with Stop
1	Black	60478.dat	Plate 1 x 2 with Handle on End
1	Black	61409.dat	Slope Brick 18 2 x 1 x 2/3 Grille
1	Black	63864.dat	Tile 1 x 3 with Groove
2	White	64288.dat	Cone 1 x 1 with Stop
2	Black	64644.dat	Minifig Telescope
1	Light Bluish Gray	76263.dat	Technic Flex-System Hose 2L (40LDU)
1	Dark Red	85975.dat	Minifig Hat Fez
4	Black	85984.dat	Slope Brick 31 1 x 2 x 0.667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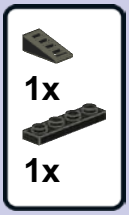

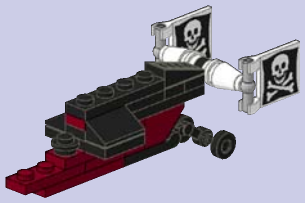

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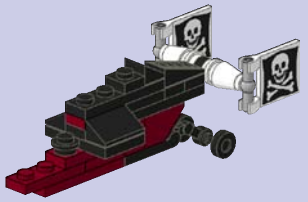

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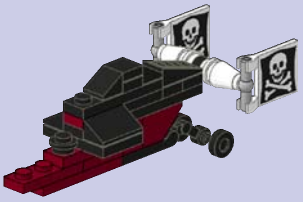

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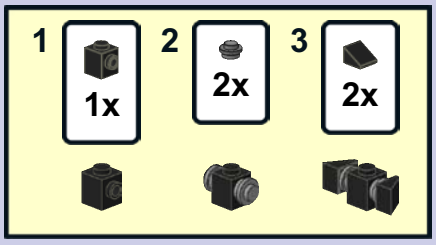

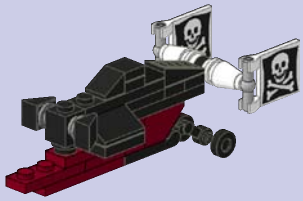

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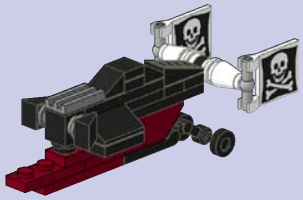

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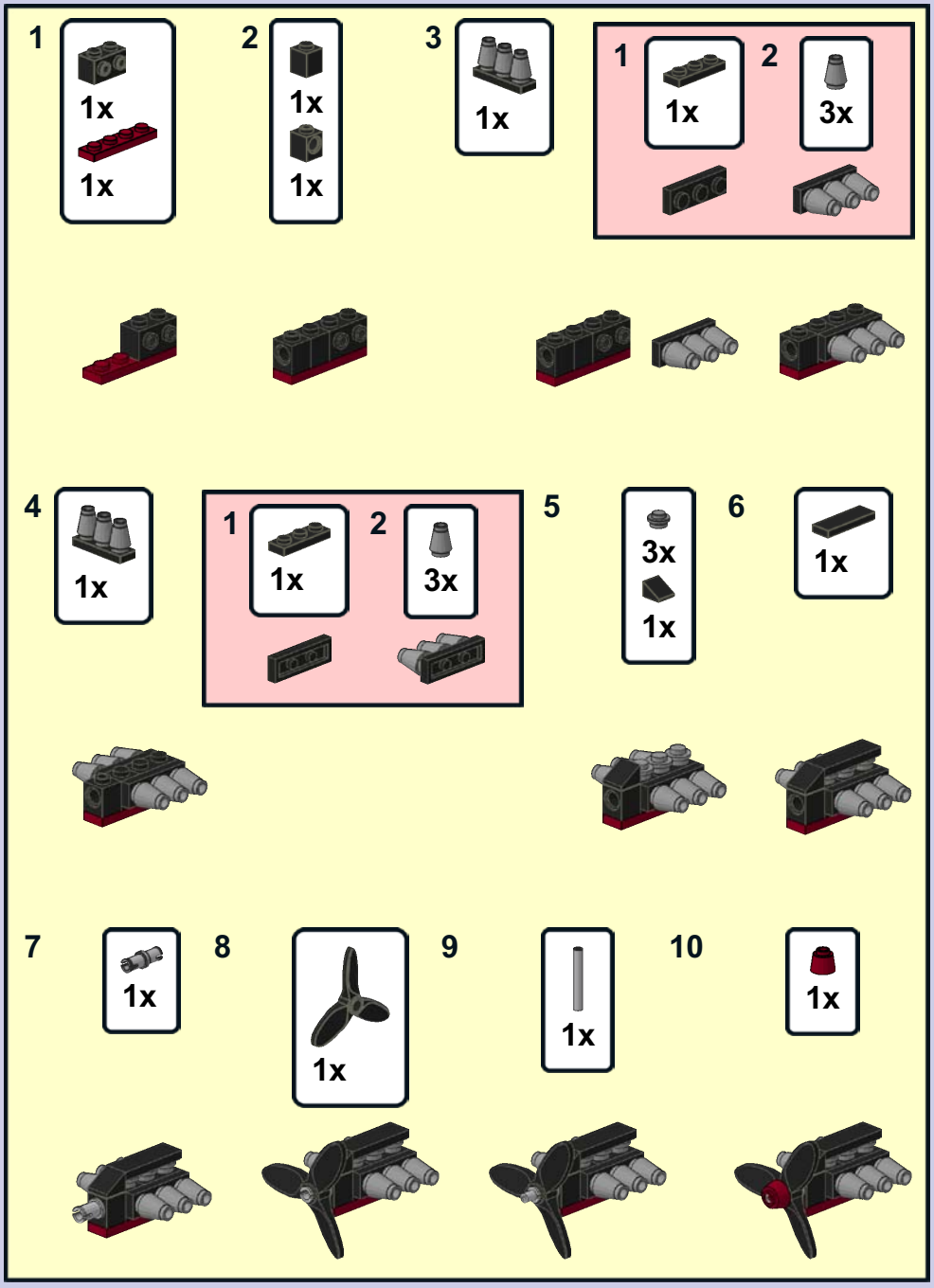
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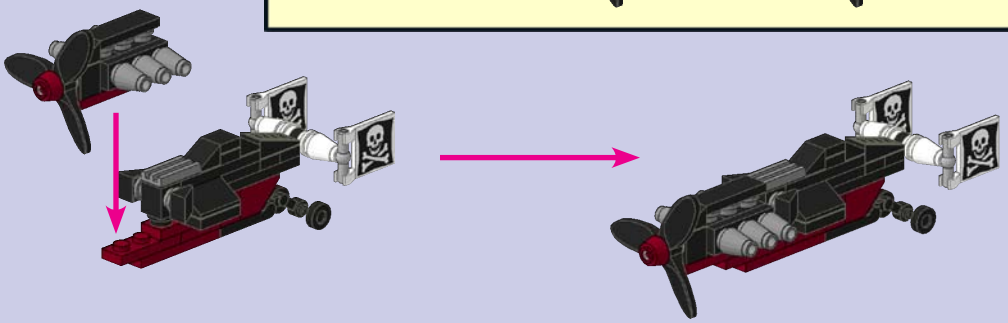

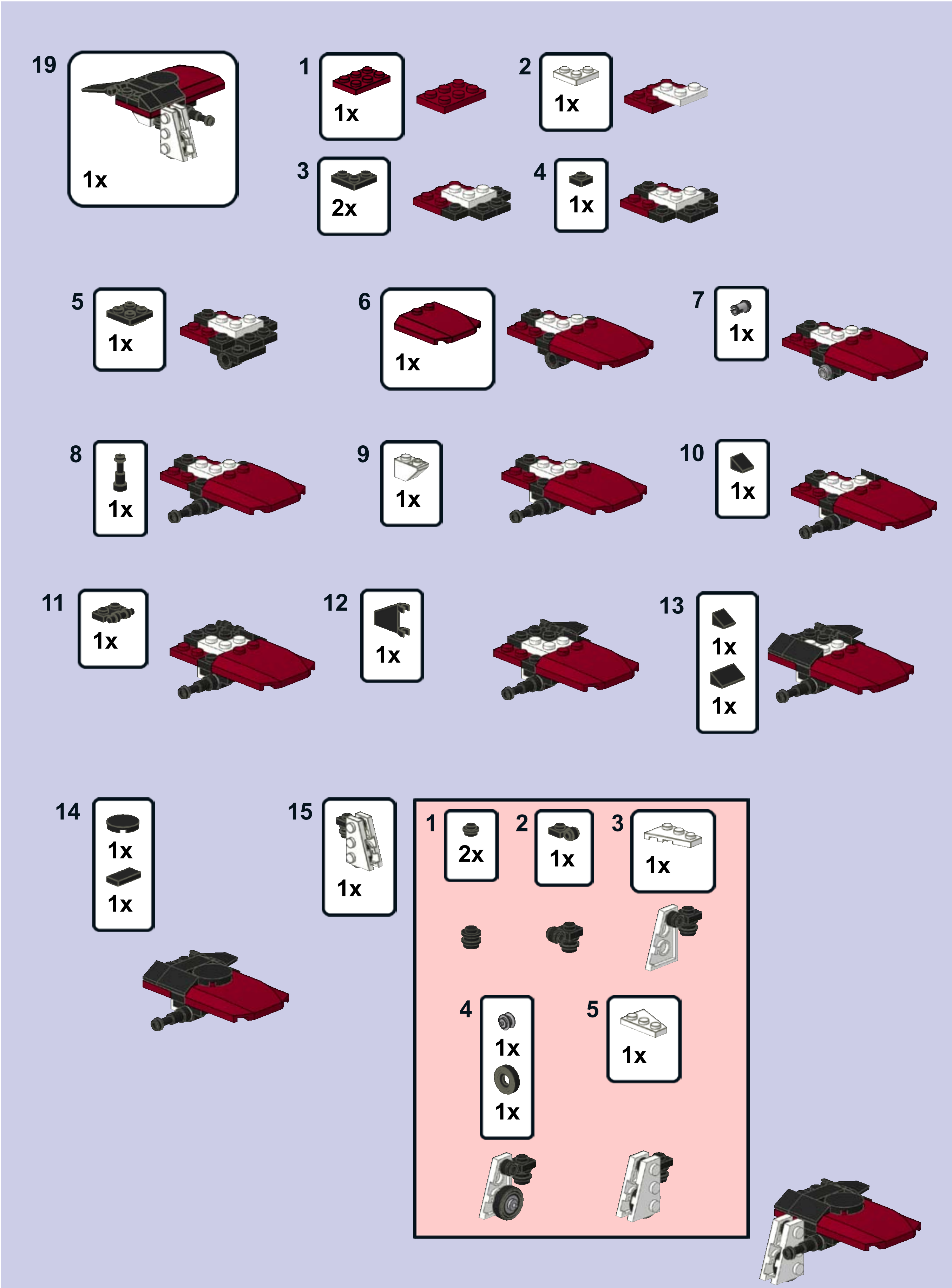
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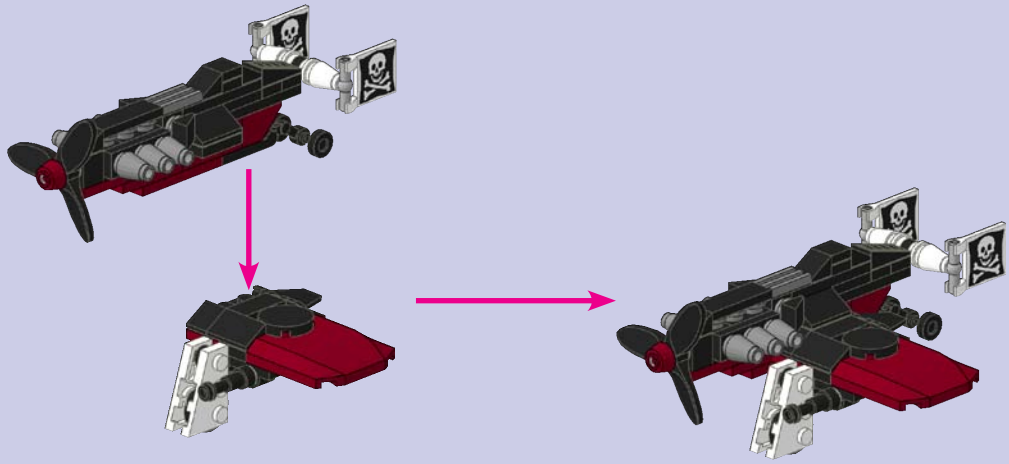

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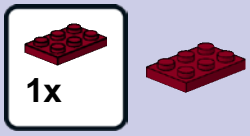

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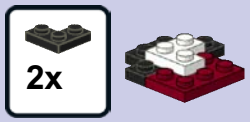

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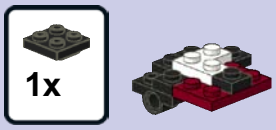

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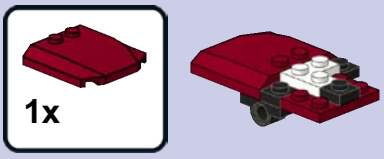

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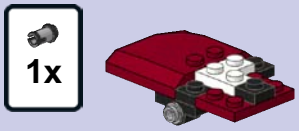

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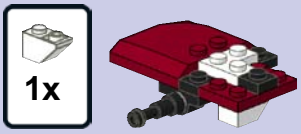

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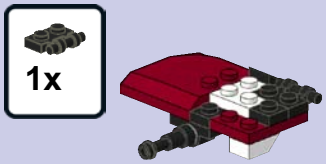

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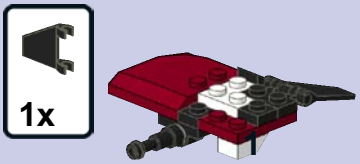

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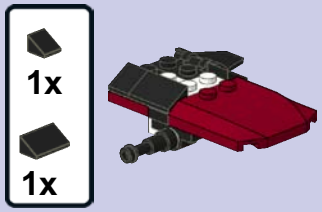

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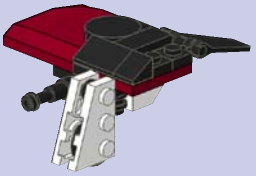
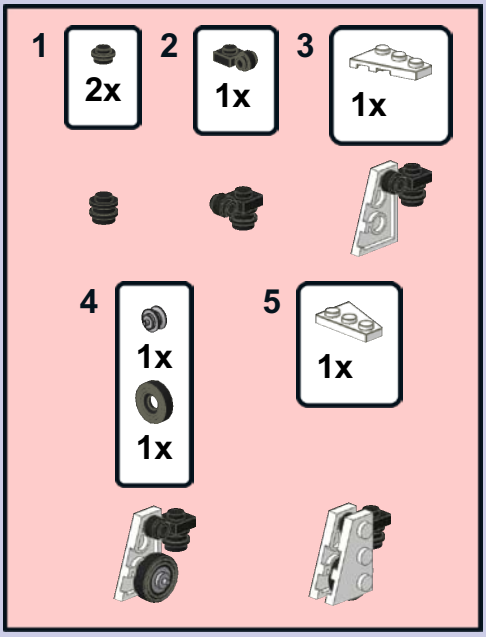
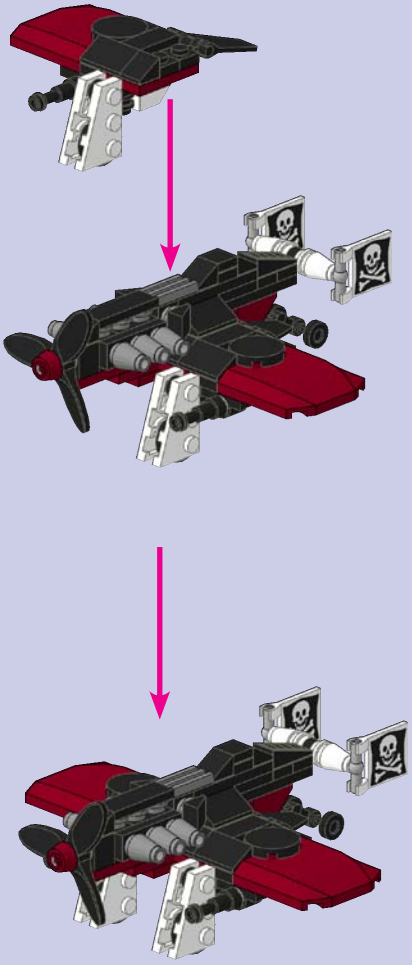
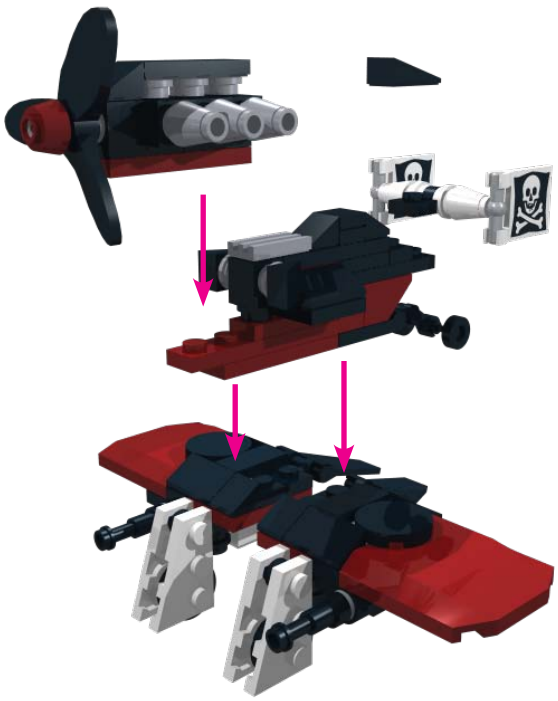






As you can see, this model is modular, so new engines and wings can be fitted to the body, or even the body can be replaced! What can you add to this model?



Jon's newest model, the Blue Angel.

Jon Hall: LEGO Aviator!

Article by Joe Meno
Photography provided by Jon Hall

One of the most distinctive builders in the LEGO community is Jon Hall. Primarily a plane builder, he made a name for himself with his reimagining of prop-driven airplanes in the style of sky-fi and dieselpunk. Here, Jon talks to *BrickJournal* about how he started building, what inspires him, and what his building method is. You'll also find he has another tie to the LEGO community, so read on!

***BrickJournal:* How long have you been building?**
Jon Hall: I started building when I was a child. I had some of the classic sets like the Yellow Castle and the early Space sets, but I only really rediscovered just how much fun it was to build things once I had my first son and he started playing with my old LEGO in my parent's loft. That would be about 6 or 7 years ago.

***BrickJournal:* Did you have a Dark Age?**
Jon: Yes, I probably stopped playing with LEGO when I was about 13 or 14 and didn't start again until I was about (ahem) 33. So quite a long Dark Age.

***BrickJournal:* What got you into building planes and later Sky-Fi?**
Jon: Two things really. I've been a big fan of Hayao Miyazaki's work for many years and one of the visual themes that run though his work is flight. He has imagined many crazy and beautifully realized flying vehicles. The other reason was a lot of builders build spaceships (as I soon realized from trawling the internet for cool models). I thought, wouldn't it be fun to do something similarly imaginative, but with planes rather than spacecraft? Sometimes I even start to design a plane like I would a spaceship and then tweak it at the last minute so it resembles a plane more. I find that frees the mind wonderfully!

***BrickJournal:* How did you come up with the name Sky-Fi?**
Jon: I didn't actually, I wish I had, as it neatly encapsulates this little sub-genre perfectly! I don't know who came up with the name but by the time I started posting on flickr, the word was already being bandied about.

***BrickJournal:* You have a *lot* of models, but which is your first model?**
Jon: My LEGO rendition of the insect-like ornithopters from *Laputa – Castle in the Sky*. Well, that's the first model that I felt was good enough to share with the world! (*http://www.flickr.com/photos/25163007@N07/2374824789/in/photostream*)

Ornithopter from Laputa – Castle in the Sky.

***BrickJournal:* What is your build process – do you sketch beforehand, or do you just build it?**
Jon: I usually sketch at least a rough design before I start building, as I find it gives me something concrete to work towards.

***BrickJournal:* What do you enjoy most about building?**
Jon: Finishing the bloody things! Seriously though, as a person who works primarily in 2-D in my day job, it's nice to be able to imagine and then create something 3-D and solid like a LEGO model in my spare time.

***BrickJournal:* What was the hardest model you built and why?**
Jon: I have to say I really struggle with most of my models at some point! It's rare that a build goes smoothly; there's usually some major building problem I have to solve in each one. Having said that, there was a plane I built called the Steel Wind that had two panels at each side of the fuselage which opened up to reveal hidden missile launchers. Getting that to work was a real headache, but I was determined to get it right because I thought it would be a cool feature.

***BrickJournal:* What other hobbies do you have?**
Jon: With my young family, a full-time job and my LEGO habit, I don't have a lot of time for any more hobbies! I've done my own comics in the past though none of them have ever been published – because they've never been finished. I read comics too but I'm very picky about what I read.

***BrickJournal:* You're a graphic designer – can you tell me some things you have done?**
Jon: I work at Dorling Kindersley and am lucky enough to have worked with LEGO on many licensed books. I designed the *LEGO Star Wars Visual Dictionary*, as well as the more recent *LEGO DC Super Heroes* one. I also designed some of the *LEGO Character Encyclopedias* which were great fun to work on.

***BrickJournal:* Where do you get your inspirations?**
Jon: As I've already mentioned, Miyazaki is a major influence. The old computer game *Crimson Skies* often gets mentioned in relation to my models for obvious reasons, although I've never actually played it! I also like to get inspiration from concept artist websites – some of the stuff that's those people produce is mind-blowing; I wish I could paint and draw as well as them! And of course, there's other LEGO builders. There's a lot of guys out there that are incredibly imaginative and talented – too many to mention here and I'd probably forget half of them anyway, and then feel bad afterwards that I didn't mention them!

Jon Hall.

A non-plane model by Jon.

Jon's Build Process

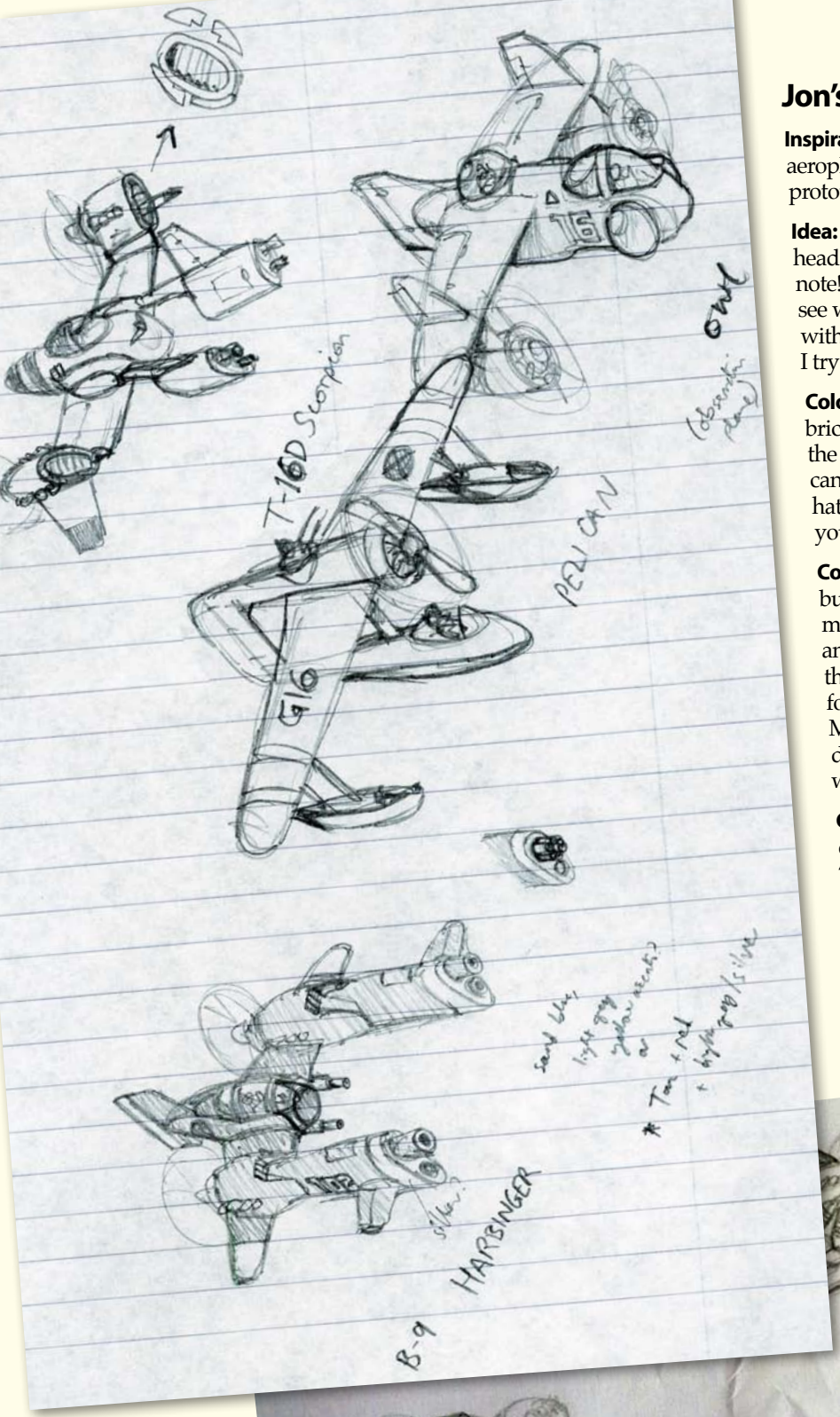
Inspiration: I have a lot of images of weird and wonderful aeroplanes from the past, some of which never got past the prototype stage. Concept art is good too.

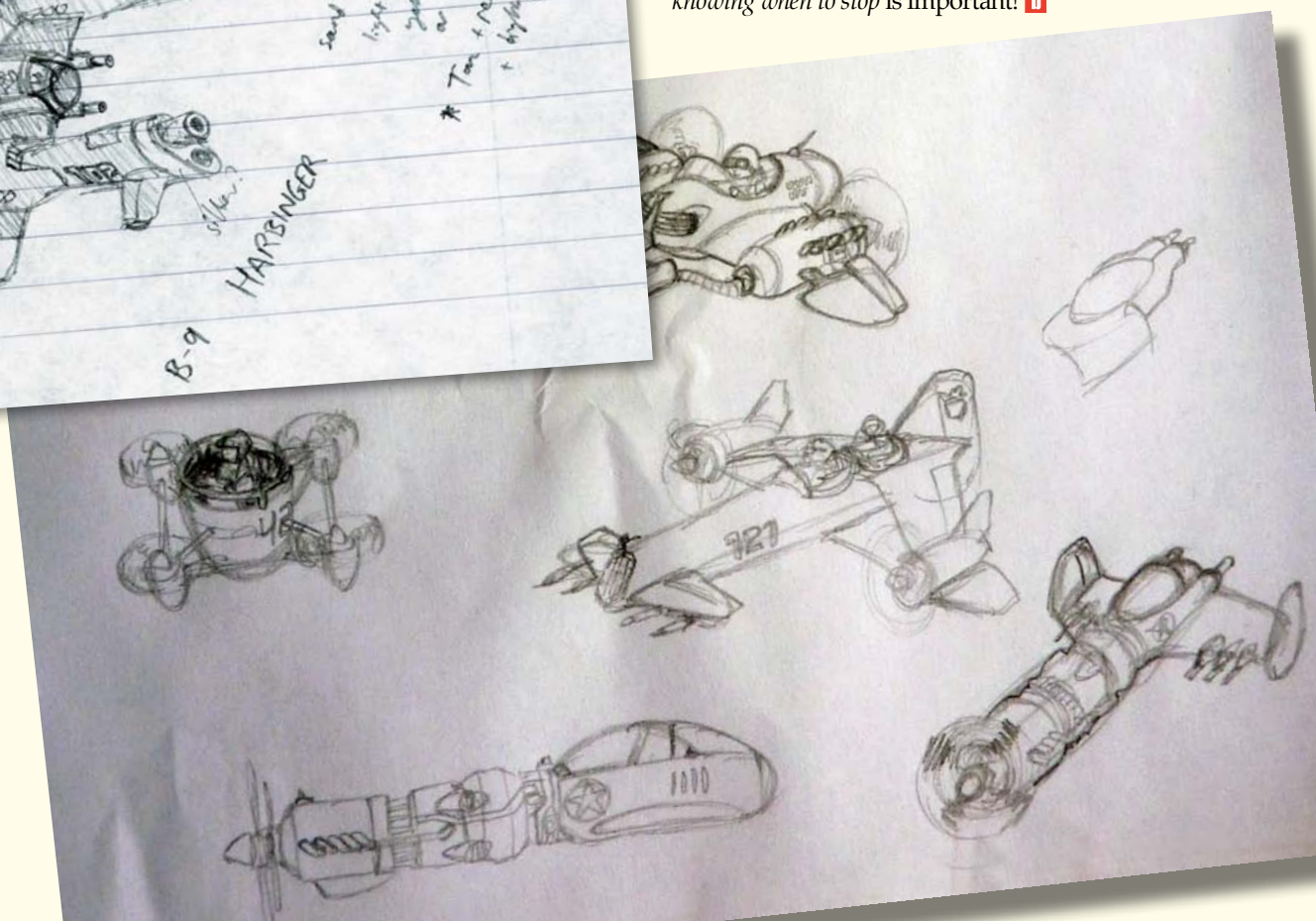
Idea: I usually scribble down ideas as they come into my head on whatever I have to hand, which is usually a post-it note! Sometimes I try different variations on a design to see which one looks better. It's much easier to do that now, with a pencil than with bricks. I hate rebuilding models so I try to minimize it as much as possible.

Color Scheme: This is almost always informed by what bricks are made in the color I want. If the parts I need for the build aren't available in dark blue say, then the plane can't be dark blue, no matter how cool it would look. I hate that color! It's frustrating at times, but it does force you to think creatively.

Construction: There's always some problem to solve but the considerations I always have with planes are: make sure the cockpit can fit the pilot and their controls, and the canopy can close properly. Design landing gear that is sturdy enough to support the plane's weight but folds away as neatly as possible – often very tricky! Make sure the wings are sturdy enough that they don't bend excessively with their own weight, or even worse, fall off!

Completion: I usually design and print my own custom decals so the plane has that distinctive '40s look. Kill tallies, nose art and retro fonts all help to give the model extra detail and help to anchor it in that particular epoch. I also usually add some official LEGO stickers for things like hatches, vents, and bullet holes. It's easy to get carried away and apply sticker after sticker so *knowing when to stop* is important!





Sketches by Jon of plane ideas.

Jon Hall's Aircraft Brief:

S-113 Viper

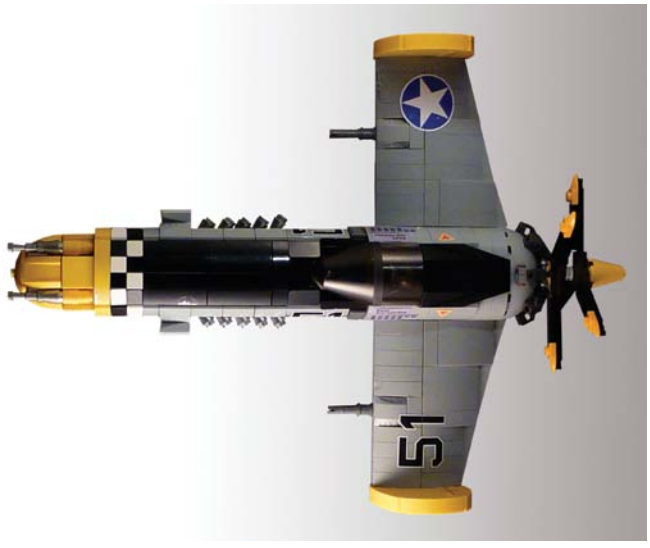
High-Speed Interceptor

After Heliconia was invaded, several of its border cities which were important industrial centres were lost. Heliconian High Command commissioned several new planes to respond to this threat, one of which was the *Viper*. Designed to be made quickly, by hand, with materials readily available, the frame was a monocoque construction with wooden composite covering, making it both light and strong. Vipers would be scrambled to defend Heliconian airspace and prevent further incursions into their country. In this respect they were a great success; their speed and powerful weaponry making short work of any enemy fighters and bombers they encountered.

Jon Hall's Aircraft Brief:

P-70 Predator

Long-Distance Fighter/Interceptor



The *Predator* was designed as a heavy fighter; its large fuel tank and large ammo cache meant it could go on extended sorties and stay in the air longer before refuelling than other similar size planes. They were instrumental in the defence of the Meneres Straits where they earned their nickname of the "Sky Shark."

Jon Hall's Aircraft Brief:

F-26 Warhawk

Fighter

The V-30 Warhawk was designed by Blackshaw Avionics as a long-range fighter and was primarily used by the Arcadian Air Force for escort duties. The plane pictured is the "Spirit of Freedom" and was one of the four planes that escorted the Arcadian Royal Airship during and after the Great War. The three other fighters were the "Spirit of Hope", the "Spirit of Justice" and the "Spirit of Destiny". All pilots were hand-picked by the Head of Airborne Forces and included some of the very finest pilots in the Kingdom. The crew consisted of one pilot and one gunner, although both cabins were fitted so that if either crew member was killed, the other could take over their duties. Each Warhawk was fitted with four Haverlock "Banshee" engines and four 24mm machine guns.

You can find more of Jon Hall's models and building instructions at his Flickr page: *http://www.flickr.com/photos/25163007@N07/* or you can scan the QR code here!

The new LEGO airfield was officially inaugurated September 10, 1962.

The LEGO Group Takes to the Air!

Article by Kristian Hauge, LEGO Idea House
Photography provided by the LEGO Group

In 1961 the LEGO Group bought a half share in an aircraft with Sønderjyllands Flyveselskab, a small air operator in southern Jutland – and began building an airfield just north of Billund. Within a year the company purchases its very own aircraft. The LEGO Group was taking to the air.

> *"Our continued expansion* [abroad – Ed.] *combined with our geographical location necessitates our buying an aircraft and laying out a landing strip close to the company. Obviously this will give our customers and those employees engaged in administration, production, sales and advertising an efficient means of keeping in contact – and further increase our competitiveness."*

With these words the LEGO Group explained why it had bought its own aircraft and opened its own airfield in Billund. By flying its employees around the world in its own aircraft, the LEGO Group would save valuable time not having to fit into the scheduled flights of commercial airlines.

More and More Travel

In 1961 the LEGO Group purchased land just north of Billund and began building a 900-meter grass landing strip. Teaming up with Sønderjyllands Flyveselskab, the company bought a small Piper Apache propeller aircraft reg. no. OY-AIU.

It wasn't long before Godtfred Kirk Christiansen recognized the need for an aircraft wholly owned by the company – and in 1962 the LEGO Group purchased its first very own aircraft, a Piper Aztec OY-FAV. In the summer of 1962 the two first LEGO pilots – cousins Hans Erik

Christensen and Hans Jørgen Christensen – visited the US to pick up the aircraft from the factory at Lock Haven, Pennsylvania. With them, they carried a cheque for DKK 453,000.

The flight home from Lock Haven was via Boston, then Gander in Newfoundland, and across the Atlantic to Shannon in Ireland. The journey across the Atlantic took 9 hours and 10 minutes. The last leg of the flight took the cousins from Ireland to Billund, landing during the evening of August 12, 1962. The landing marked the unofficial opening of the airstrip, and the two pilots were received by Godtfred Kirk Christiansen and his wife, Edith. The big, official inauguration took place on September 10.

The company's need for the aircraft was demonstrated by the fact that in the period August 12 to September 10, it spent 75 hours in the air.

Billund Airport Spreads its Wings

In 1964 the Piper Aztec OY-FAV was retired – to be replaced by a newer version of the same aircraft. That same year the LEGO Group transferred ownership of the airfield to a new company, Billund Lufthavn *[Airport – Ed.]* A.m.b.A. Under the transfer agreement, the LEGO Group undertook running the airport during the next five years and subsidized the expansion of its runway system. In return the LEGO Group received unobstructed right of use of the airport.

Another view of the inauguration.

The two LEGO pilots: Hans Erik Christensen and Hans Jørgen Christensen.

After flying the new LEGO aircraft across the Atlantic, the two LEGO pilots are welcomed by LEGO owner Godtfred Kirk Christiansen and his wife Edith.

The new and larger Billund Airport was inaugurated in November 1964. There was a sharp contrast from the modern airplane exhibited to the ox cart carrying the oldest inhabitant in Billund.

As part of its expansion, Billund Airport – as it is now known – built a 1600-meter paved runway in time for its new inauguration on November 1, 1964. In 1971 the runway was expanded to its present length of 3100 meters. Today, Billund Airport is Denmark's second-largest airport; in 2011 it handled more than 2.7 million passengers.

The fact that Jutland's main international airport is located in Billund is largely thanks to the LEGO Group. Had the company not had a significant need for international travel coupled with an entrepreneurial spirit, the original airfield probably would not have been built – and there would have been no driving force for opening Billund International Airport in 1964.

To celebrate the 50th anniversary of the first wholly owned LEGO airplane, all participants in this year's LEGO Inside Tours got this exclusive model of the Piper Aztec airplane.

VW Vans Gone Wild!

Article and Photography by Mark Stafford

These VW split screen camper vans are by Craig Callum, Design Lead of the LEGO® Legends of Chima Speedorz team. When asked about his obsession with the vehicle, he admits the blue beaten-up versions are a van he used to own and really liked. "I would never say it's my favorite vehicle. But I guess it is."

The AT-AT version is, "Because it's funny." Let's face it, no other reason is needed – look at VW Luke Skywalker! *[below]*

The Christmas gnome is a Danish Tradition. Craig built it in his first few months with The LEGO Company a couple of years ago. It's meant to make the place look Christmassy; instead it's just a bit weird!

Community Ads

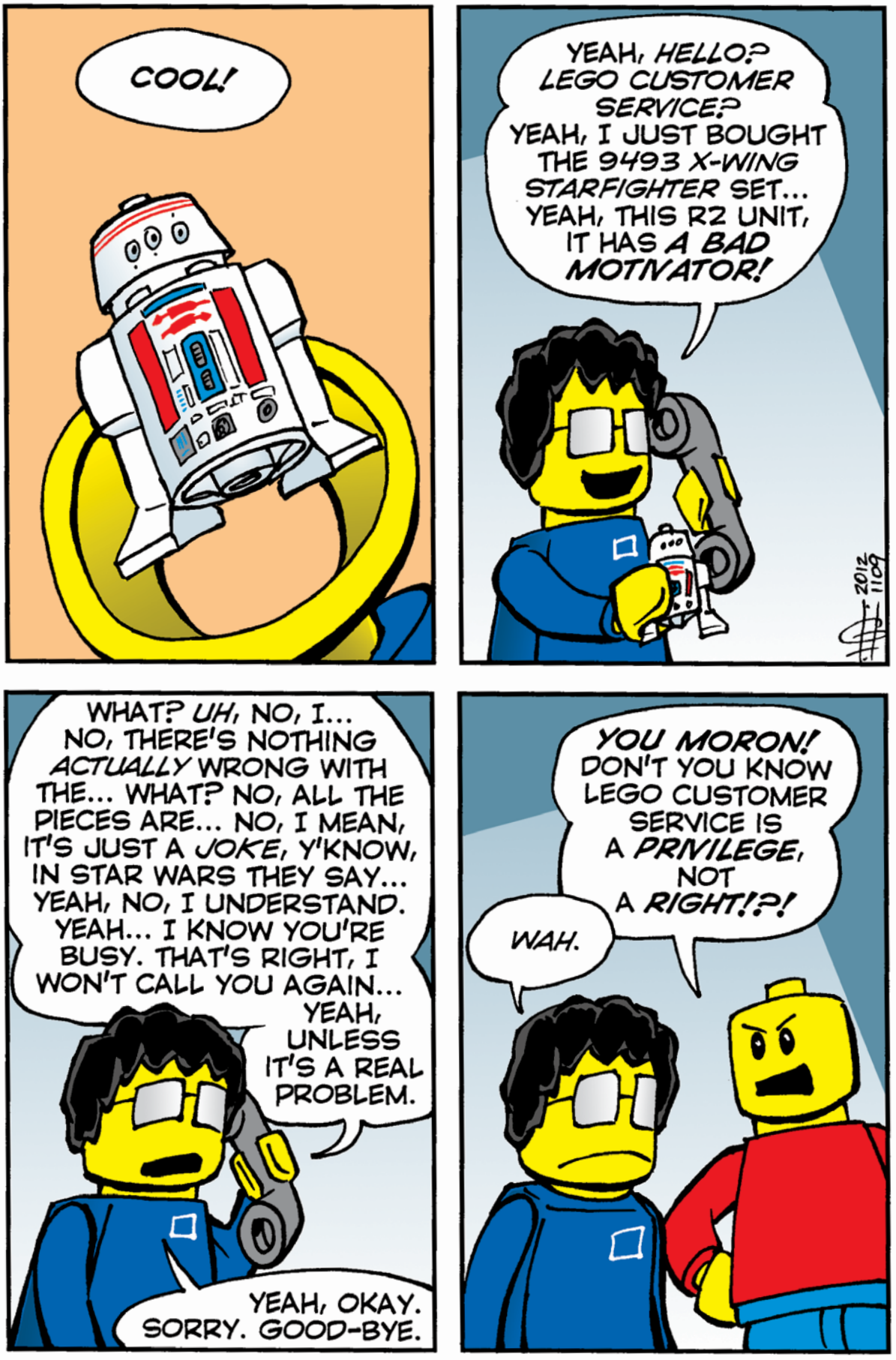
And it's the end of another issue of *BrickJournal!* I figured I would wrap up with some pics of me not being that serious at Festival of the Masters in Orlando – Downtown Disney, actually. Every November, I go and act like a member of the Greater Florida LEGO Users Group and take part in their display. I also have a lot of fun cutting up with Mark Staffa (above), an AFOL from Georgia who builds a great assortment of models, and Dan Steiniger (above right), LEGO Master Model Builder – who built the Hulk with the help of visitors to the LEGO Imagination Center. It's a lot of fun, as you can see.

Which leads me to the wrap-up – see you next issue, where we feature *Star Wars!*

See you then!

AFOLs

by **Greg Hyland**



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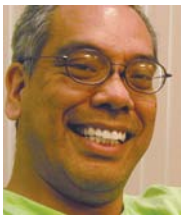

BRICKJOURNAL magazine (edited by Joe Meno) spotlights all aspects of the **LEGO®** Community, showcasing events, people, and models every issue, with contributions and how-to articles by top builders worldwide, new product intros, and more. Available in both **FULL-COLOR** print and digital editions. Print subscribers get the digital version **FREE!**

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BRICKJOURNAL #6

Spotlight on **CLASSIC SPACE SETS** and a look at new ones, **BRANDON GRIFFITH** shows his **STAR TREK MODELS,** LEGO set designers discuss their work creating the **SPACE POLICE** with **PIRATE SETS, POWER FUNCTIONS TRAIN DEVELOPMENT,** the world's **TALLEST LEGO TOWER, MINI-FIGURE CUSTOMIZATION,** plus coverage of **BRICKFEST 2009** and more!

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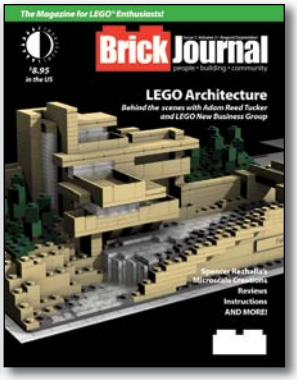

BRICKJOURNAL #7

Focuses on the new **LEGO ARCHITECTURE** line, with a look at the new sets designed by **ADAM REED TUCKER,** plus interviews with other architectural builders, including **SPENCER REZKALLA.** Also, behind the scenes on the creation of **POWER MINERS** and the **GRAND CAROUSEL,** a **LEGO BATTLESHIP** over 20 feet long, reports from LEGO events worldwide, and more!

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BRICKJOURNAL #8

We go to the Middle Ages, with a look at the LEGO Group's **CASTLE LINE,** featuring an interview with the designer behind the first LEGO castle set, the **YELLOW CASTLE.** Also: we spotlight builders that have created their own large-scale version of the castle, and interview other castle builders, plus a report on **BRICKWORLD** in Chicago, ands still more instructions and building tips!

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BRICKJOURNAL #9

BrickJournal looks at **LEGO® DISNEY SETS,** with features on the Disney LEGO sets of the past (**MICKEY** and **MINNIE**) and present (**TOY STORY** and **PRINCE OF PERSIA**)! We also present Disney models built by LEGO fans, and a look at the newest Master Build model at **WALT DISNEY WORLD**, plus articles and instructions on building and customization, and more!

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BRICKJOURNAL #10

BrickJournal goes undersea with looks at the creation of LEGO's new **ATLANTIS SETS,** plus a spotlight on a fan-created underwater theme, **THE SEA MONKEYS,** with builder **FELIX GRECO!** Also, a report on the **LEGO WORLD** convention in the Netherlands, **BUILDER SPOTLIGHTS, INSTRUCTIONS** and ways to **CUSTOMIZE MINIFIGURES, LEGO HISTORY,** and more!

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BRICKJOURNAL #11

"Racers" theme issue, with building tips on race cars by the **ARVO BROTHERS,** interview with **LEGO RACERS** designer **ANDREW WOODMAN, LEGO FORMULA ONE RACING, TECHNIC SPORTS CAR** building, event reports, instructions and columns on **MINIFIGURE CUSTOMIZATION** and **MICRO BUILDING,** builder spotlights, **LEGO HISTORY,** and more!

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A look at school sculptures by **NATHAN SAWAYA**, builder **MARCOS BESSA**'s creations, **ANGUS MACLANE**'s CubeDudes, a Nepali Diorama by **JORDAN SCHWARTZ**, instructions to build a school bus for your LEGO town, minifigure customizations, how a **POWER MINERS** model became one for **ATLANTIS,** building standards, and much more!

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BRICKJOURNAL #13

Special **EVENT ISSUE** with reports from **BRICKMAGIC** (the newest US LEGO fan festival, organized by *BrickJournal* magazine), **BRICKWORLD** (one of the oldest US LEGO fan events), and others! Plus: spotlight on BIONICLE Builder **NORBERT LABUGUEN,** our regular column on minifigure customization, step-by-step "You Can Build It" instructions, spotlights on builders and their work, and more!

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BRICKJOURNAL #14

Discover the world of stop-motion **LEGO FILMS,** with brickfilmer **DAVID PAGANO** and others spotlighting LEGO filmmaking, the history of the medium and its community, interviews with the makers of the films seen on the **LEGO CLUB SHOW** and **LEGO.com,** and instructions on how to film and build puppets for brick flicks! Plus how to customize minifigures, event reports, step-by-step building instructions, and more!

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BRICKJOURNAL #15

Looks at the **LEGO MECHA** genre of building, especially in Japan! Feature editor **NATHAN BRYAN** spotlights mecha builders such as **SAITO YOSHIKAZU, TAKAYUKI TORII, SUKYU** and others! Also, a talk with **BRIAN COOPER** and **MARK NEUMANN** about their mecha creations, mecha building instructions by **SAITO YOSHIKAZU**, our regular columns on minifigure customization, building, event reports, and more!

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BRICKJOURNAL #16

Focuses on **STEAMPUNK!** Feature editor **GUY HIMBER** gives a tour with a look at his work, **DAVE DeGOBBI**'s, **NATHAN PROUDLOVE**'s, and others! There's also a look at the history of LEGO Steampunk building, as well as instructions for a Steampunk plane by **ROD GILLIES**! Plus our regular columns on minifigure customization, building tips, event reports, our step-by-step "You Can Build It" instructions, and much more!

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BRICKJOURNAL #17

LEGO SPACE WAR issue! A **STARFIGHTER BUILDING LESSON** by Peter Reid, **WHY SPACE MARINES ARE SO POPULAR** by Mark Stafford, a trip behind the scenes of **LEGO'S NEW ALIEN CONQUEST SETS** that hit store shelves earlier this year, plus **JARED K. BURKS'** column on **MINIFIGURE CUSTOMIZATION,** building tips, event reports, our step-by-step **"YOU CAN BUILD IT" INSTRUCTIONS,** and more!

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BRICKJOURNAL #18

Go to Japan with articles on two **JAPANESE LEGO FAN EVENTS,** plus take a look at **JAPAN'S SACRED LEGO LAND,** Nasu Highland Park—the site of the BrickFan events and a pilgrimage site for many Japanese LEGO fans. Also, a feature on **JAPAN'S TV CHAMPIONSHIP OF LEGO,** a look at the **CLICKBRICK LEGO SHOPS** in Japan, plus how to get into **TECHNIC BUILDING, LEGO EDUCATION,** and more!

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BRICKJOURNAL #19

LEGO EVENTS ISSUE covering our own **BRICKMAGIC FESTIVAL, BRICKWORLD, BRICKFAIR, BRICKCON,** plus other events outside the US. There's full event details, plus interviews with the winners of the **BRICKMAGIC CHALLENGE** competition, complete with instructions to build award winning models. Also **JARED K. BURKS'** regular column on minifigure customizing, building tips, and more!

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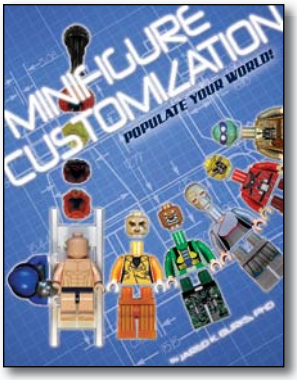

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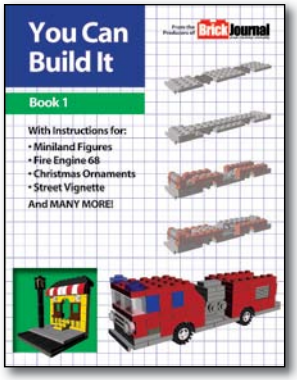

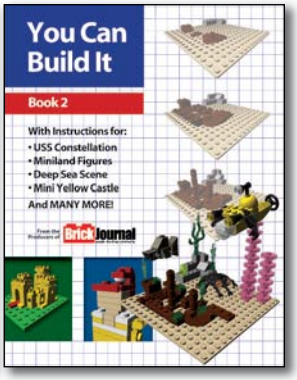

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