

Sinking Titanic

Designed by: Ryan McNaught

Piece count: 133,900

Built by: Ryan McNaught, Mitchell Kruik

Build hours: 240

Wonders of the Titanic

Date: Launched 31 May 1911. Embarked on maiden voyage 10 April 1912. Sunk 14 -15 April 1912

Size: 269 metres long, 28.2 metres at its widest point

Place: Built in Belfast, Northern Ireland. Disembarked on maiden voyage from Southampton, England, on route to New York City, USA

The White Star Line's RMS Titanic was a luxury cruise liner of unprecedented size. Many thought the Titanic was 'unsinkable' given the in-built safety precautions in its hull. This popular assumption proved eerily prophetic. During its maiden voyage, wireless radio operators on board Titanic received warnings about iceberg fields, however the Captain ignored advice to slow down given these dangers. At approximately 11:40pm, an iceberg was sighted, and the Captain ordered the ship to turn hard to avoid collision – but it was too late. Just 37 seconds after the warning, the iceberg tore open five of the ship's 'unsinkable' watertight hull compartments, and the Titanic quickly began to sink. Distress signals were sent to nearby ships that were hours away. Lifeboats were deployed, but in the confusion only 705 people climbed aboard. As the bow of the ship rapidly sunk with the weight of its flooded compartments, the stern was pulled out of the water. Just after 2am, the Titanic's midsection gave away, and the ship snapped in half, drowning hundreds of passengers. Hundreds more were thrown into the icy waters, freezing to death. In total, more than 1500 passengers and crew perished.

Designer & Builder notes

I'm about pushing the boundaries of what LEGO can do, and this model is no exception. In fact, in all my years of doing LEGO, I've never been asked by more people, "How on earth did you do that?" than with this one. The sheer gravity-defying nature and striking emotional pose really does make you wonder. Even during the build itself I was asking myself the same thing.

Like a lot of my models I tend to court controversy, and this model certainly didn't fail to deliver, with significant coverage from a lot of different press calling it "horrific", "obscene", "The worst LEGO model ever made," and even, "What's next? A 9/11 set of towers with planes in them?" But perhaps the most critical was an article in a Belfast newspaper where someone from the local Titanic historical society was quoted as saying:

"It's a shame that, having gone to so much trouble, rather than showing the Titanic at its finest, this model maker has instead decided to show it at its worst moment, just as it's plunging into the ocean and breaking apart," she said. "He's obviously a very creative chap and it's just a pity that he's chosen this particular time in Titanic's history rather than something more positive." The fact that we've been able to elicit such a response, to me, means we've made the model as realistic as we possibly can. – *Ryan & Mitch*

Australia II

Designed by: Russell Søren-Larson, Ryan McNaught

Piece count: 19,881

Built by: Claire Ashworth

Build hours: 70

Wonders of Australia II

Date: 1983 winner of the America's Cup

Size: 12 metres long

Place: Built in Cottesloe and registered at Royal Perth Yacht Club, Western Australia

In the final race of the 1983 America's Cup, Australia II defeated the American yacht Liberty, ending the longest winning streak in the history of sport: America's 132 years dominating the America's Cup. Australia II's design was hailed as the secret weapon that gave the yacht an edge over the Americans. Ben Lexcen designed the famed 'winged keel' of Australia II, a yacht owned by a Western Australian syndicate, led by businessman Alan Bond. Built by local boat builder Steve Ward in Cottesloe, and tested in the Netherlands, the winged keel of Australia II outperformed conventional keeled yachts of the same class. The keel reduced the heavy drag caused by regular shaped keels, and making it easier for the yacht to tack (turn) in tight spaces. It was pushed to its limits in a best of seven races against the Americans in 1983. Australia II lagged behind Liberty 3-1 in the final stages of the competition, before staging an astounding comeback: winning the final three races in a nail-biting finish to claim the Cup. The victory was seen as a triumph for Australia, not just in sailing, but as a symbol of the country's coming of age.

Designer notes

This model is all about the fabric. From the sail to the flag to rigging, that holds it all together. Creating a model with convincing fabric is always a challenge. It's a constant battle between elegant design and structural fortitude. Thanks to a little help from the steel, there's a real sense of movement with this model. It seems the sails are pushed out, pulling the boat through the water. – *Russell & Ryan*

Builder notes

Australia II may not be one of the biggest builds but the model had a number of time consuming complexities to overcome.

The first challenge was building the boat itself. There was an incredible amount of what we refer to as "overhang". Overhang is where some bricks are overhanging the bricks underneath them with no support. Overhang is not uncommon by one or two studs in most models. But parts of Australia II had overhang of more than 15 studs, meaning I had to build a complete support structure to hold the model up while I worked.

Overhang aside, the most difficult part of the build would have to have been the sails (which were hardly a breeze!) The sails have curves at incredible angles. Curves themselves are generally not much of a problem but when you are limited to the thickness of the model, that's when it becomes trickier. As we move from the bottom of the main sail to the top, we go from around 10-studs-thick to a tiny two studs. This required an amount of on-the-go planning before each layer was constructed.

All the pain was worth it in the end because the sails look absolutely fantastic and they really bring the model to life by helping to create that "in motion" effect. – *Claire*

Volkswagen Beetle

Designed by: Russell Søren-Larson

Piece count: 75,000

Built by: Claire Ashworth, Mitchell Kruik

Build hours: 98

Wonders of the Beetle

Date: Mass production began in 1946

Size: most models of the Beetle measure around 4 metres long, and 1.5 metres wide

Place: Germany

The Volkswagen Beetle's unconventional design has proved popular since its introduction to the international car market in the late 1940s. Volkswagen AG (VW) was founded by the German government in 1937. This company's aim was to mass-produce a small, low-priced passenger 'people's car' or 'volkswagen' in German. VW was initially operated by the German Labour Front, the National Socialist trade organisation that operated as a branch of the Nazi party. The German Labour Front hired Austrian automotive engineer Ferdinand Porsche to design the original 'volkswagen': a small saloon car designed to comfortably carry a family of five, along Germany's new autobahn motorways, at speeds of up to 100 kilometres per hour. It was dubbed the 'Beetle' by international press shortly after its unveiling at the 1939 Berlin Motor Show. While Volkswagen has changed interior details of the Beetle, the basic rear-mounted engine and rounded exterior design has remained largely unchanged. The affordability, quality and enduring style of the Beetle have made it iconic. The Beetle is firmly engrained in popular culture; often representing hippies and surf culture, and starring in the popular Herbie movie franchise, starting with Love Bug in 1968.

Designer notes

What person does not remember the first time they laid eyes on a VW bug? From our first experience to the last, it's always been about the body lines. We are really happy with all the little tricks we pulled to cram in the intricate details like the door hinges, handles, headlights and the little chrome bits. After taking in the whole car from a distance, we really encourage you to zoom in and inspect all the tiny details on this one. – *Russell*

Builder notes

I love vintage cars from the 1950s and '60s and had no hesitations working on this one because this was my first car! It gave me a huge advantage as I know the cheeky character of the iconic car. This model is huge and built in one of those classic poses you would see in a magazine, with its wheels turned for extra effect. This uses one of my favourite colours, dark blue, and lots of it too! The shape doesn't work well with LEGO, being all curves but a clever bit of plate work has smoothed it over really nicely.

My favourite part is the engine. While modified from the original in a couple of small ways, it's practically bursting with little details and looks ready to take another car on in a race! Or at least, almost ... – *Claire & Mitch*

Olympic Rings and Torch

Designed by: Clay Mellington

Piece count: 6,900

Built by: Clay Mellington

Build hours: 74

Wonders of the Olympic Rings and Torch

Date: Olympic Games were first recorded to have taken place in 776BCE

Size: Various

Place: Ancient Greek site of Olympia

The modern Olympic Games are named after the popular physical competition staged between freeborn Greek men in the Ancient Greek city of Olympia. According to mythology, the games were initiated by Hercules. Physical educator Baron Pierre de Coubertin was inspired by these Greek games, and was the mastermind behind the modern Olympic Games in the late 19th century. He oversaw the foundation of the International Olympic Committee in Paris in 1894, and the first summer games in Athens in 1896. Olympic Games have been held every four years since, except for 1916, 1940 and 1944 due to the World Wars. Coubertin saw the Olympic Games as a powerful bridge between cultures; sport being the common thread between far flung countries. In this spirit, he presented the Olympic flag of five interlaced rings in 1914. The coloured rings represented all the worlds' flags at the time, linked by the Games. The burning ceremonial flames of Ancient Greek temples inspired the tradition of a flaming torch. The torch was first introduced at the 1928 Games in Amsterdam, and adopted as a relay during the 1936 Games in Nazi-controlled Berlin, which today is a popular precursor to the modern Olympics.

Designer and Builder notes

Stemming from a love of the Olympics since seeing the Sydney 2000 games as six-year-old, I was overjoyed to be able to recreate the iconic Sydney 2000 Torch. It was very hard to capture the unique complex curves that make up the shells which make this torch so interesting when LEGO bricks are mostly flat! I chose to use a layering system where I made each one as a separate piece and joined them all together at the end. It's not a usual method but I had to try and push the limits of the bricks and my skill to make it the best I could. As my first solo build as a part of the Brickman team, this really tested my LEGO building abilities! I loved the chance to use the beautiful medium azure colour on this model. It's not a very common colour in LEGO sets, so I hope fans of rare colours will like this.

I'm lucky enough to have a Sydney Torch of my own which made it so much easier to get detail references. I was also super proud to get the torch very close to the actual size of the real one.

To go with the torch, I have built a large set of Olympic Rings, the official Symbol of the Olympic movement. To make it safe to hang, there is a basic steel structure inside the rings but it doesn't hold the model together at all. The LEGO is doing all of the work, I promise. I hope these models can inspire people to build in new and interesting ways that they may not have tried before. Challenge yourself and you'll be surprised what you can make. – Clay

Macintosh Computer

Designed by: Ryan McNaught

Piece count: 4,500

Built by: Ryan McNaught

Build hours: 22

Wonders of Exhibit

Date: 1984

Size: 34.3 centimetres long, 40.6 centimetres wide, 50.8 centimetres high

Place: California, USA

The original Macintosh computer is considered a major milestone for computing; provoking the industry into creating the modern technology we use today. Apple's personal computer, Macintosh, was developed with a revolutionary graphic user interface instead of having to use complex codes as commands. The interface resembled the functionality of today's computers; with on-screen windows, a choice of different fonts, icons such as a rubbish bin for deleted items and a mouse to navigate easily through different applications. Apple Inc. was the brainchild of Stephen Wozniak and Steve Jobs. The two banded together in 1976, establishing their start-up computer company in Jobs' garage in Silicon Valley, California. By 1980, Apple had grown to 1,000 employees, and was valued at US\$2 billion. Wozniak was the brilliant computing engineer behind Apple's technology, while Jobs was one of the first entrepreneurs to understand the broad appeal of the personal computer, technology which had yet to gain a footing in the everyday consumer market. Although the Macintosh was not an instant commercial success, it soon found footing in a burgeoning desktop publishing revolution with the introduction of an affordable laser printer by Apple in 1985, quickly became a mainstay tool for business.

Designer and Builder notes

When I was sitting down coming up with the list of the "wonders" which we would build, I tried to think as laterally as I could, and something that was a true modern wonder, we thought was the Internet, as it really shapes our global lives today. How could we represent that in physical form? How could we communicate that without being too abstract or artisanal? I settled on making a computer, as that's the traditional (although now not so much) way in which we interacted, and what better way to show off my generation by showing one of the first mass produced public versions of internet access: the humble "Toaster" Mac.

It actually has all sorts of weird shapes and angles going on, so wasn't the easiest thing to build at all. My favourite bit is the buttons under the screen at the front. (The power plug on the back is great too!) – *Ryan*

Concorde

Designed by: Ryan McNaught

Piece count: 65,216

Built by: Ryan McNaught, Mitchell Kruik, Claire Ashworth

Build hours: 248

Wonders of the Concorde

Date: Development began in 1962; the Concorde was first flown in October 1969, with the first commercial flight in January 1976

Size: 62.1 metres long, 25.5 metre wingspan, 11.3 metres tall

Place: England and France

The Concorde is a technological masterpiece, regarded by many aviation enthusiasts as the most beautiful aircraft ever made. In 1962, England and France signed a treaty to develop the world's first supersonic passenger plane, spurred on by US pilot Chuck Yeager first breaking the sound barrier 15 years previous. It had the most powerful commercially available pure jet engines, which enabled a maximum cruising speed of 2,179 kilometres per hour (more than twice the speed of sound!). In 1963, US President Kennedy joined the race to develop a super plane, proposing a similar American project, led by Boeing. In a move typical of the Cold War the USSR responded: Nikita Khrushchev ordered his leading aviation experts to beat the West to this achievement. Both were unsuccessful. The American Boeing passed the design stages, but could not raise funding for a completed prototype. The Soviet version TU-144 (nicknamed "Konkordski" by the western press for its suspiciously similar design to the Concorde) crashed in tests alongside the Concorde in 1973, and never flew again. The Concorde was unrivalled for its time, and since, in accelerated commercial air travel.

Designer notes

I'm happy to admit I'm an aviation geek. I'm very lucky in that I get to travel a lot, and what better way to travel than twice the speed of sound? I never got the opportunity to fly Concorde, (I have visited them in museums many times) but I can just picture the cream of society making the journey across the Atlantic, the fancy champagne, the high class food and of course the fashions of the day. This model gave me quite a few design challenges, least of which is the sheer size and the huge surface area of the wings. There is a lot of LEGO in this model. Don't be fooled by its elegant shape. There is a lot happening shape-wise. – *Ryan*

Builder notes

I don't think we had done a cut away in a scale that wasn't a fit with the standard LEGO mini figure before. But to achieve a decent size for a Concorde, we settled on something larger, so we could get more detail in. The main fuselage wasn't too hard, apart from heavy brick support under the wings to keep them from bowing and ruining the shape of the aircraft. The interior was a different beast. Things that seem huge to a mini figure weren't so inside, so we have to be clever with how we'd fill out the space.

One benefit to the size, was with construction of the aircraft seating, it gave the opportunity to give the seats different poses. The cab was a joy to build, going crazy on all the old classic space-printed tiles to make one of the large computers that dominated the space in the front of the aircraft.

The other fun job I had was filling the plane with all sorts of quirky and funny luggage. Being in a custom scale, all the luggage had to be hand built, using the Lego bucket handles as the standard handle on the majority of the luggage. – *Ryan, Mitch & Claire*

Tokyo Subway Map

Designed by: Troy Walker, Ryan McNaught

Piece count: 31,280

Built by: Troy Walker, Claire Ashworth

Build hours: 225

Wonders of Tokyo

Date: The first section of subway, between Asakusa and Ueno, opened on 30th December 1927

Size: 203.4 kilometres, 179 stations

Place: Tokyo, Japan

The Tokyo Metro is the busiest subway system in the world. It is famously complex, chaotic and crowded. Tokyo is home to around 13.5 million people, which equates to roughly 11 percent of the entire country's population. This results in a crushing amount of humanity forced onto the city's train system every day. Popular imagery of the Tokyo subway involves white-gloved station attendants squeezing passengers into carriages, like sardines in a can. This is the daily rush hour reality for commuters in Tokyo. Tokyo is a city plagued with earthquakes and tremors, which makes the city's ground very unstable and difficult to tunnel and drill. Despite this, the Tokyo subway developed quickly. The Tokyo Underground Railway Company was established in August 1920, with the first section of subway, part of the Ginza line, constructed within two years. From there, the underground train lines of the subway have rapidly spread across the vast metropolis of Tokyo, and continue to grow today. This efficiency in construction is mirrored in the Metro's efficient functionality. Unusually, the Metro is privately owned, a condition lauded by many as the source of the Metro's efficient success.

Designer and Builder notes

What first might look like a lot of squiggly lines, or a plate of very colourful spaghetti, is in fact a map of the Tokyo Subway system. This map is very much, as close as possible in LEGO bricks, what you would actually see in the Tokyo Subway system, right down to the numbering of the stations. There is over one hundred – count them!

Creating this subway map had its fair share of challenges, but you may be surprised to learn, size wasn't one of them. It was colours that presented the biggest challenge. The Tokyo Subway has thirteen lines, not counting other connected lines featured on the map, that's thirteen separate colours that are required to build it. One may think, LEGO has more than thirteen colours, and you would be correct, however, not all the colours exist in all the bricks. In short, we easily had the colour palette, just not always the brick palette to match. After much back and forth during the design process, we were able to match bricks to each colour required for the map, the result is what you see before you, a brick-accurate subway map, true to the original. – *Troy, Ryan & Claire*

Flying Scotsman

Designed by: Mitchell Kruik

Piece count: 164,611

Built by: Mitchell Kruik, Claire Ashworth, Troy Walker

Build hours: 217

Wonders of the Scotsman

Date: 1922-23

Size: 21.34 metres (70 feet) long, 3.96 metres (13 feet) high

Place: Built in Doncaster, England, UK

When it was launched in 1923, the Flying Scotsman was the flagship new steam locomotive for the London and North Eastern Railway (LNER). It quickly gained fame as an astounding feat of British engineering. Designed by Sir Nigel Gresley, the Flying Scotsman earned its name from the 'Flying Scotsman' service between Kings Cross station in London and Edinburgh, Scotland. These express service trains transported passengers in unprecedented style, and dramatically reduced travel times between the cities. Selected to appear in the 1924 British Empire Exhibition in London, the Flying Scotsman quickly became the star of the show, attracting over 20 million visitors. In 1928, the Flying Scotsman hauled the first non-stop journey between London and Edinburgh. This was an incredible feat, as it was the longest nonstop service in the world at the time. In 1934, the Flying Scotsman set another record: a top speed of 100 mph (approx. 160km/h). The blaze of publicity this record attracted, cemented its fame as the fastest steam locomotive in the world. After two million miles in British Rail service, the Flying Scotsman was retired. It has since undergone lengthy conservation work, preserving it as a proud and iconic symbol of the United Kingdom.

Designer and Builder notes

Being a massive anorak on all facets of trains, I was the first to put my hand up for one of the greatest inventions of the modern age, the steam locomotive, and one of the most famous of all, the celebrity engine, Flying Scotsman. As I started to work out the size and style of the loco, I had to base it on a certain period of its existence, to make sure that we could get the huge model to be a true representation of the original.

While seeming like a relatively easy build to start off with, the real challenge came as I focussed on the wheels and motion. The wheels on Flying Scotsman, as with any fancy express steam train built in the 20th century, are quite thin and ornamental (they were the racing wheels of the 20th century!)

With that came the challenge of building in a medium like LEGO, where not all the fine detail can be added with standard building techniques. This is where the Lowell sphere (brainchild of Bruce Lowell) came into play. It meant I could build the entire wheel in quarters, using bricks with studs on their sides to connect the quarter sections, forming a finely decorated rim for each of the wheels. In retrospect, my favourite element is the cab, with all the dials, tubes and linkages that a driver has to know well if he's to work something like this beautiful machine. – *Mitch*