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U.S.S. ENTERPRISE™  
**NCC-1701**  
SPECIAL ISSUE

CONSTITUTION CLASS

LAUNCHED: 2258

2009 MOVIE TIMELINE

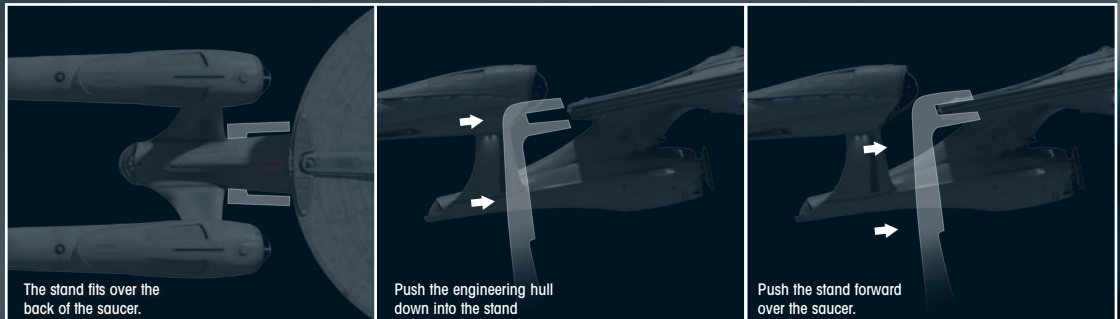
CAPTAIN: JAMES T. KIRK

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U.S.S. ENTERPRISE  
NCC-1701

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# U.S.S. ENTERPRISE

## SPECIFICATION



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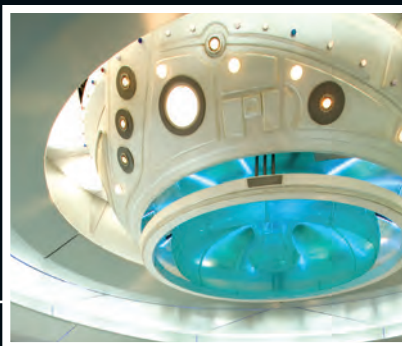
LAUNCHED: 2258


CAPTAINS: CHRISTOPHER PIKE

CREW: JAMES T. KIRK

WEAPONRY: PHASERS

PHOTON TORPEDOES



A detailed view of the Starship Enterprise (NCC-1701-A) flying through the rings of Saturn. The ship is shown from a low angle, highlighting its saucer section and nacelles. The rings of Saturn are prominent in the foreground, and the planet's surface is visible in the background. The lighting is dramatic, with the ship's lights and the planet's glow illuminating the scene.

► The *Starship Enterprise* as it passes Saturn's rings. During its first 18 months of service the ship and her crew foiled both Nero and the genetically-engineered terrorist Khan Noonien Singh.

# U.S.S. ENTERPRISE

When Nero altered the course of history it resulted in a larger, more powerful *Starship Enterprise*

After the Romulan Nero altered the timeline, it had a ripple effect that altered many things, not least the *U.S.S. Enterprise*, which was now launched in 2258, more than 10 years later than it would have been in the original timeline. The new ship was larger and more advanced than its counterpart and became Starfleet's flagship.

The *Constitution*-class vessel was partially constructed on Earth's surface in Iowa, before being formally launched from the San Francisco shipyards in orbit around Earth. It was initially placed under the command of Starfleet veteran, Captain Christopher Pike, with much of his new

crew being drawn straight from Starfleet Academy.

Despite sharing a class name with its counterpart this *Enterprise* was a radically different vessel that could enter a planet's atmosphere, was significantly larger and used a different design of warp engine. Many of the other technologies such as phasers and photon torpedoes remained the same, though in this timeline Starfleet developed a form of long-range transporter that could operate over enormous distances.

On its first mission the *Enterprise* saved Earth from Nero's attack, but Pike was left crippled. A newly-graduated James Kirk distinguished himself in Pike's stead and was promoted to Captain, while Pike became an Admiral. Despite some initial discipline problems, Kirk was given the ship's first five-year exploration mission in 2260, and the ship began the task that had earned her counterpart her place in history.



◀ In the altered timeline James T. Kirk joined the *Enterprise* straight from Starfleet Academy and was made Captain after he saved Earth.

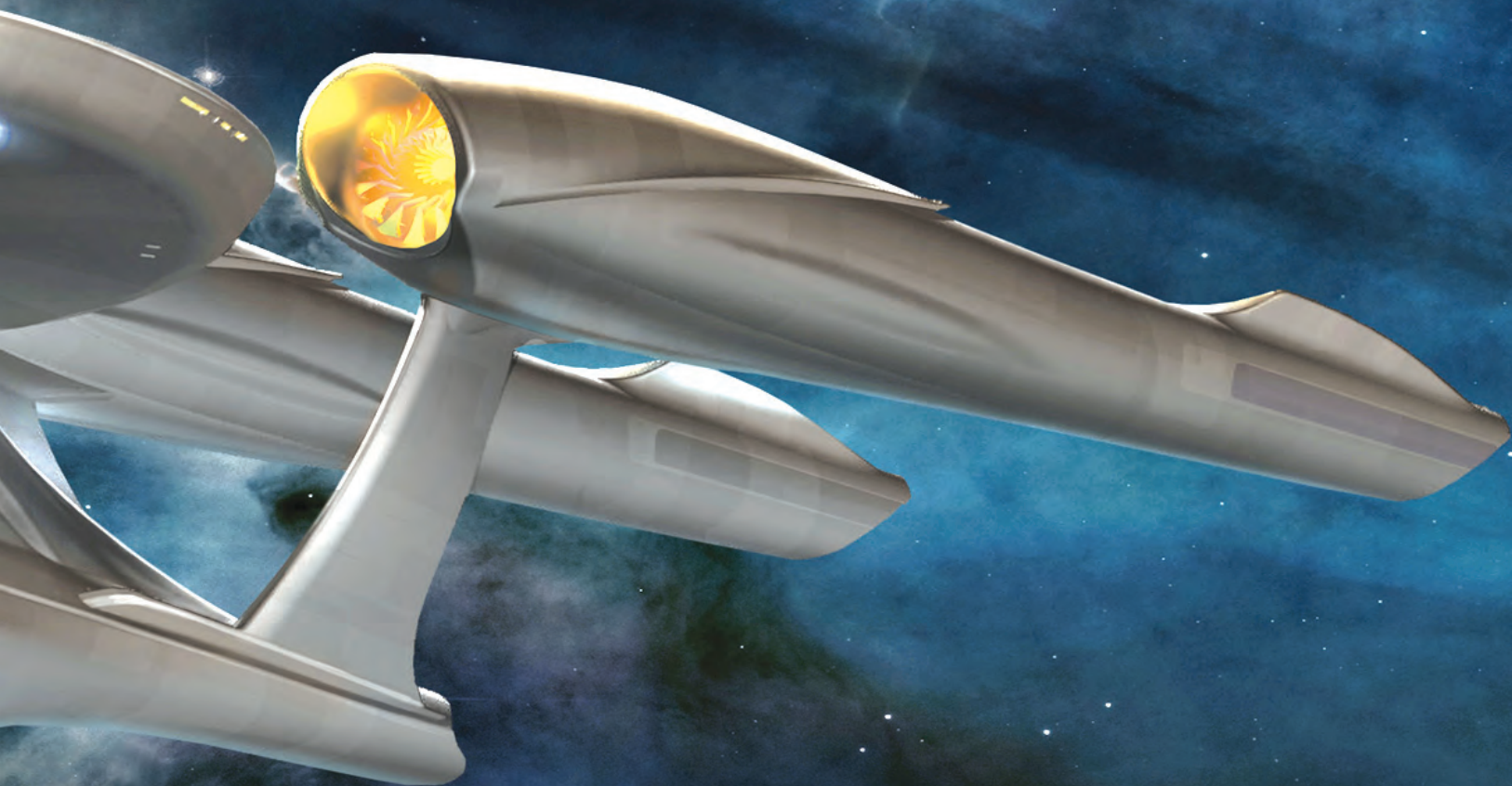


# DESIGNING THE **ENTERPRISE**

When *STAR TREK* returned in 2009, everything was updated including the famous starship, which was cooler than ever.

For many people the *Enterprise* is *STAR TREK*, so getting the design of the new version right was every bit as important as casting a new Captain Kirk or a new Mr. Spock. In many ways redesigning it for the 21st century summed up the challenge the whole movie presented to director

JJ Abrams – somehow he had to make it instantly recognizable but at the same time it had to be modern and sexy. In essence this was the brief that he gave his production designer, Scott Chambliss: design a new *Enterprise* that would be both similar and noticeably different to Matt Jefferies' original.



As Chambliss explains, Abrams stressed that while he wanted to make a tribute to Roddenberry's original series he wanted to do so without following slavishly in its footsteps. "At the same time he wanted to embrace the inherent optimism of Roddenberry's point of view. That was a great relief to me as I was concerned that JJ might take a more contemporary, cynical approach. It dovetailed nicely with my intention, which was to explore the strongest and most lasting futuristic thought and design

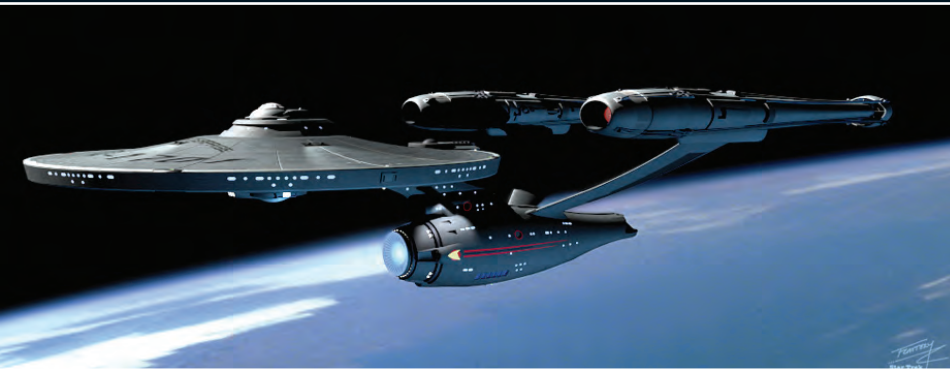
from the era of the original series."

With that idea in mind Chambliss and Abrams gravitated towards 1960s futurism as exemplified by the Finnish American architect Eero Saarinen, who designed the TWA terminal at JFK airport. They decided that this 1960s vision for the future was exactly the look and feel they wanted to bring to their new *STAR TREK* universe, believing that this approach to the design would give the film a particular visual signature that would make it stand out against other movies.

▲ Ryan Church's concept painting for the new *Starship Enterprise*, which was sent to ILM, where Alex Jaeger and his team completed the design.



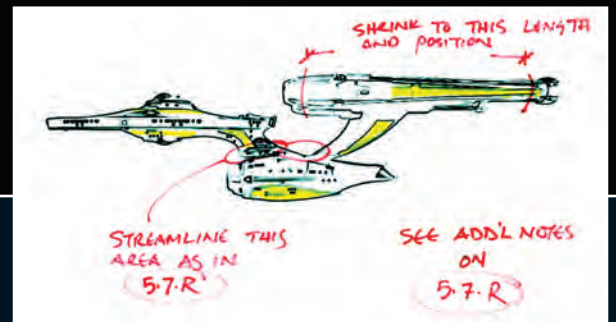
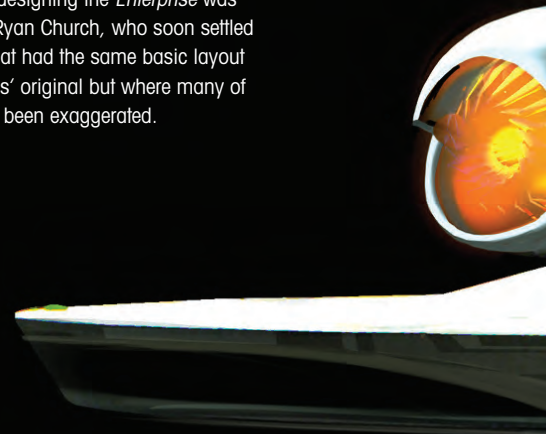
▲ The new *Enterprise* was designed under the direction of production designer Scott Chambliss, who was responsible for realising JJ Abrams's vision for the new movie.



▲▼ The first person to work on concepts for the new version of the *Enterprise* was Tim Flattery. The designs he produced show an *Enterprise* that is similar to the version that made its debut in *STAR TREK: THE MOTION PICTURE*, and Chambliss and Abrams wanted more of a departure.



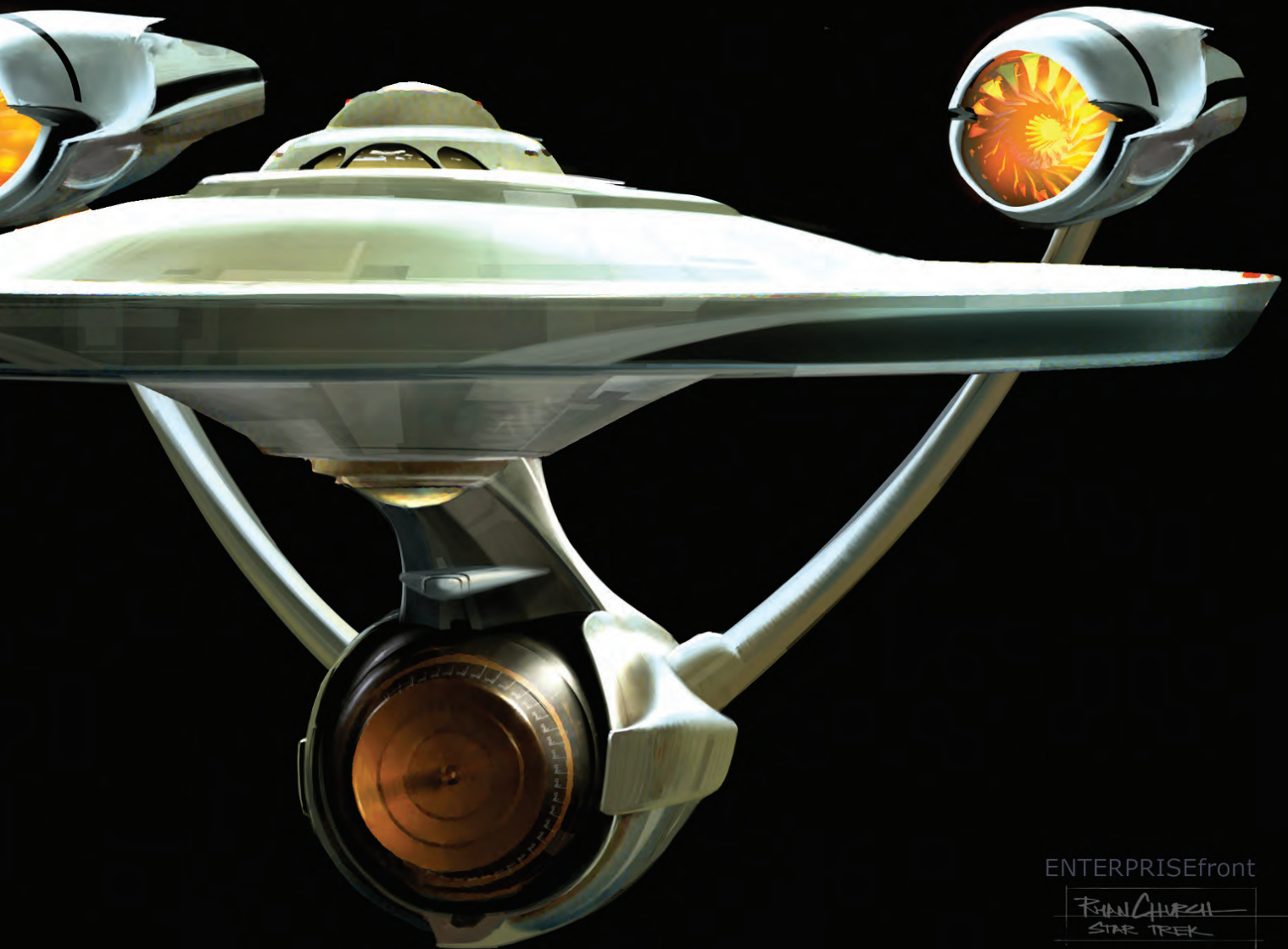
► The task of designing the *Enterprise* was handed on to Ryan Church, who soon settled on a version that had the same basic layout as Matt Jefferies' original but where many of the details had been exaggerated.



▲ As this early drawing shows, the team worked from the motion picture version of the *Enterprise*, looking for interesting ways to refine the shapes and enhance the design for a 21st-century audience.

They also had the chance to revisit some of the ideas that had been behind the design of the original series, only this time with a much bigger budget. "Our task was to reinterpret what was essentially an original, lowish budget television-show design that was much too undeveloped to stand up to big screen requirements. Even before beginning the design process we knew that we had the opportunity to enhance the purpose, the





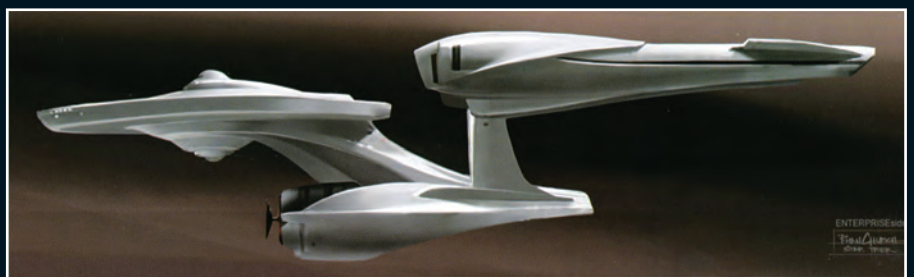
ENTERPRISEfront

Ryan Church  
STAR TREK

functionality and the very industrial design of the ship inside out and from top to bottom.” But, Chambliss adds, they didn’t want to redesign things just to make them look cool and modern. “I felt it was important that – just as in the series – everything that could be seen on the ship needed to be readily accessible to an audience. Whether we understood the technology or not, visually the audience had to be able to grasp what the crew were doing and how it all added up to running a big space ship.”

Chambliss also developed an important principle that would inform the look of everything

► Church experimented with a variety of subtly different profiles for the redesigned ship, where different elements were exaggerated.





▲ Ryan Church continued to produce concept drawings even after ILM started work on the ship. He also created several paintings that showed important VFX scenes such as the moment when Kirk looks up and sees the *Enterprise* under construction.

his team created. The movie featured three major cultures – Starfleet, Vulcans, and Romulans – each of which Chambliss reasoned would have their own approach to design.

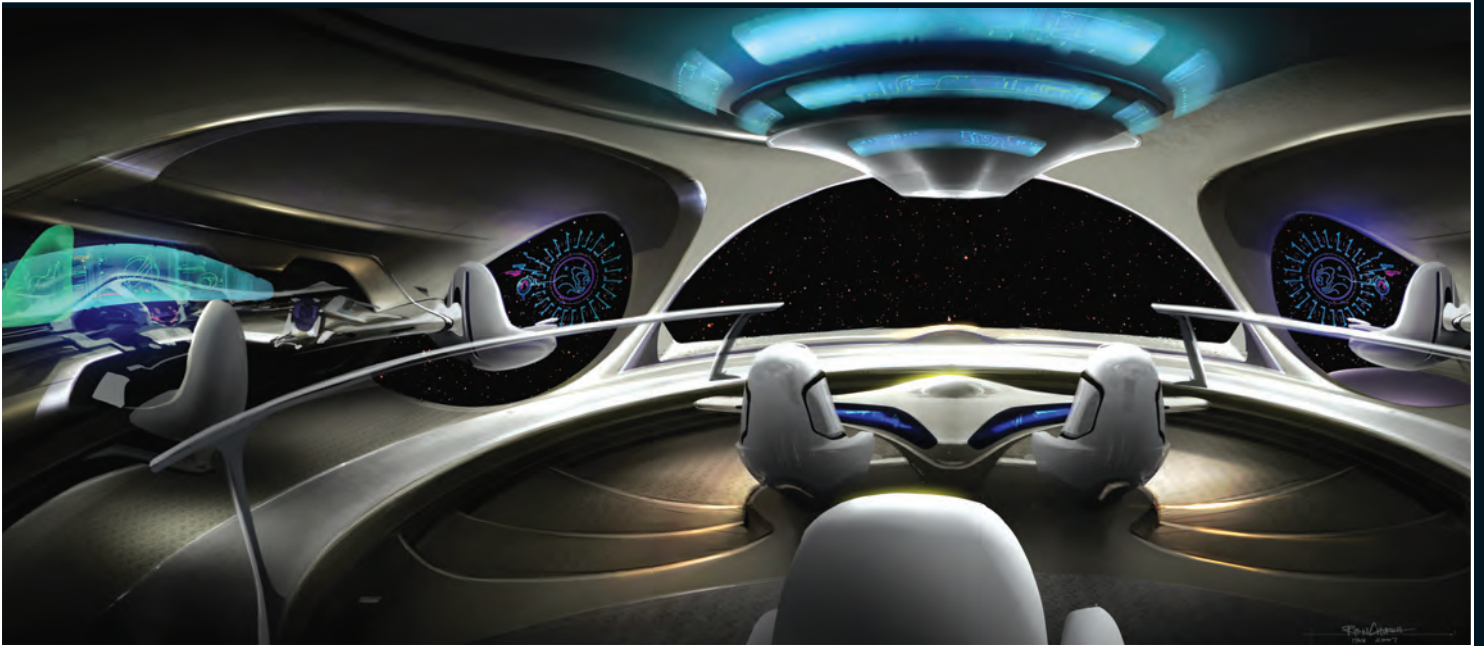
#### LOGIC AND EMOTION

“I saw our *STAR TREK* as a fantastic opportunity for me to visually define three very different cultures: human, Vulcan and Romulan. By defining them in archetypal terms – Vulcan equals logic driven, Romulans equals violently emotional, and human equals logic and emotion – I had the means to develop their physical worlds as utterly individual, using those ideas as the conceptual motivator of each design choice for their distinct cultures.” So for the *Enterprise* the idea was to develop a design that sat between the aggressive design of the villain Nero’s ship and the extremely rational designs favoured by his Vulcan cousins.

The earliest designs for the new *Enterprise* were done by Tim Flattery. The visuals that he produced were a little too close to the familiar movie version of the *Enterprise* and Abrams and Chambliss wanted to find a design that was less familiar. Another designer, Ryan Church, also started work on the design. As a veteran of the *Star Wars* prequels and *Avatar*, he had plenty of experience designing starships. “Ryan brought a very refined sensibility to the table alongside enormous technical skills,” says Chambliss. “His tastes and styles were in strong accord with the design sensibility I wished to develop for the exterior of the ship and later for the interior environments.”

Church remembers being told that Abrams was open to anything, and that Chambliss was keen for him to try out an entire gamut of design possibilities from very subtle re-skins of the original *Enterprise* all the way to a look that would be barely

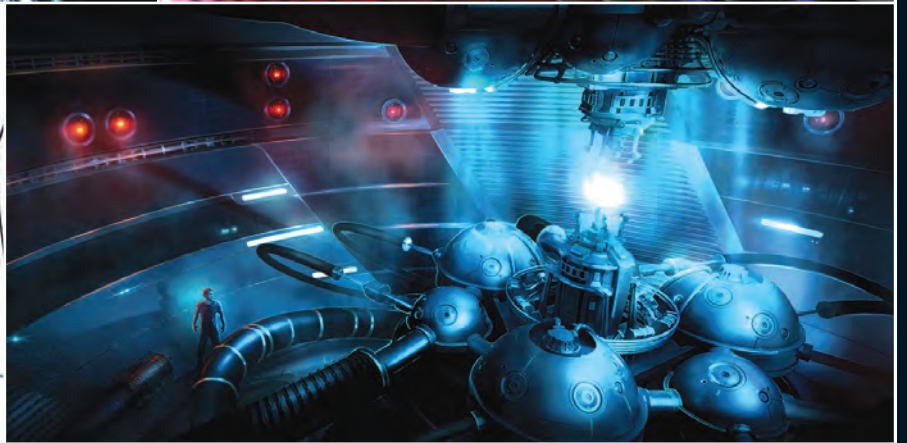
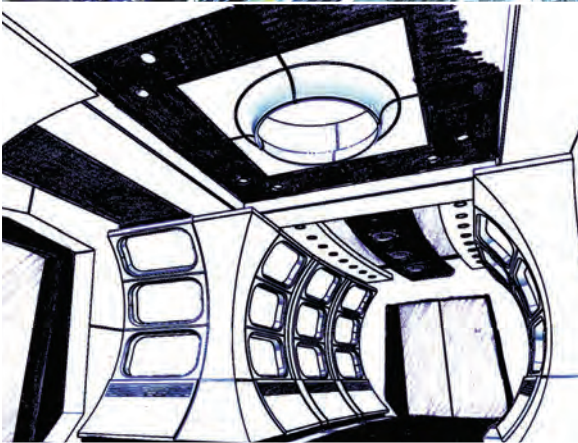
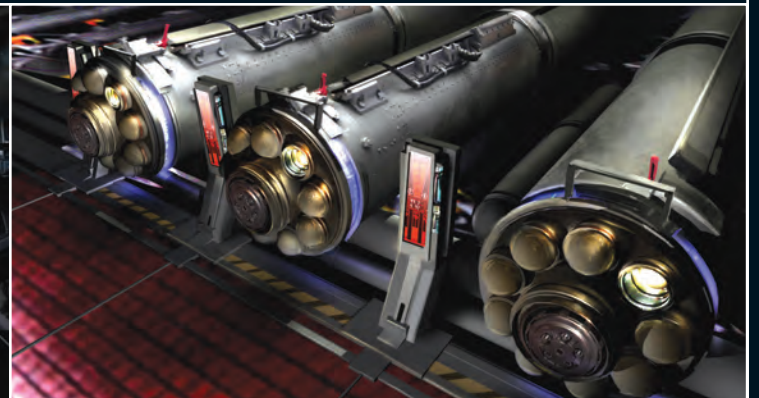
# ENTERPRISE Interiors

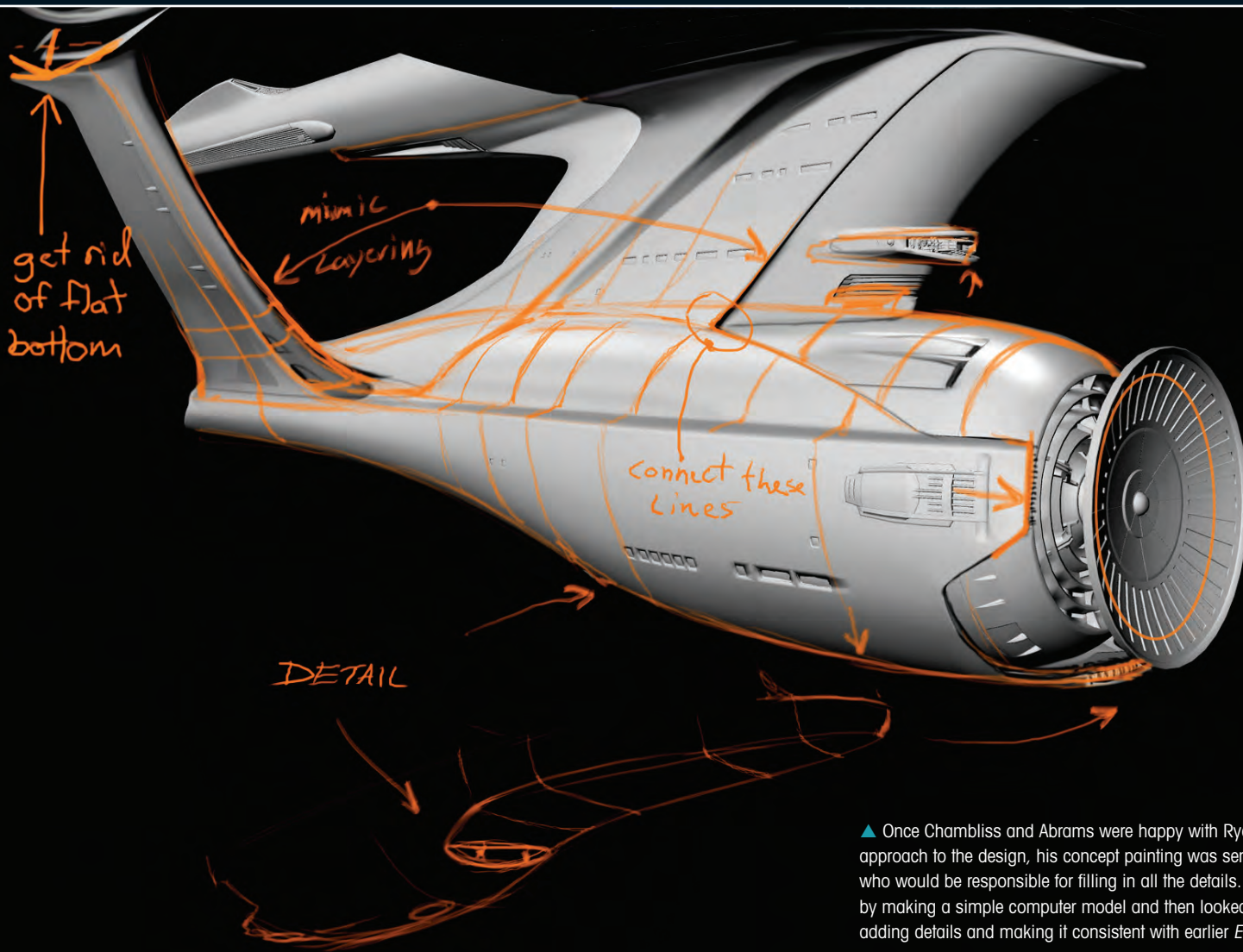


The *Enterprise's* interiors were designed at the same time as the ship's exterior, with Ryan Church once again producing concept artwork, though in this case he was joined by Andrew Reeder, who worked

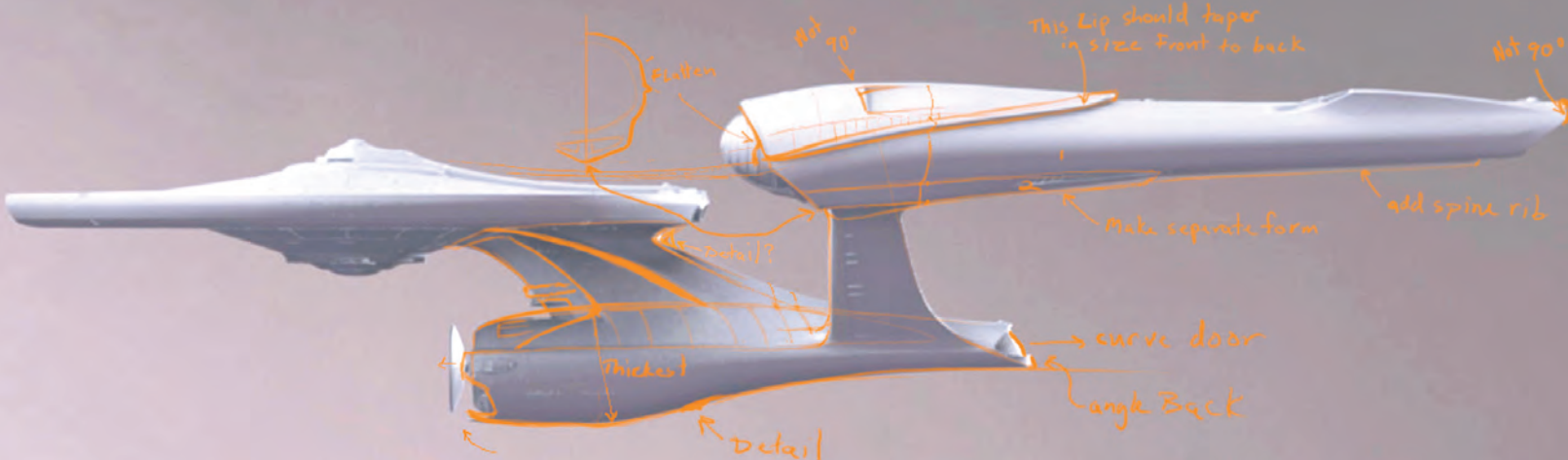
on the design of the bridge and the corridors and would contribute the warp core when the team returned to make *STAR TREK INTO DARKNESS*. Chambliss was delighted with the results and describes the

interiors as looking good and feeling good to work in. "The detail of the design was so thorough that each character could only feel pride being a member of the team on that ship."





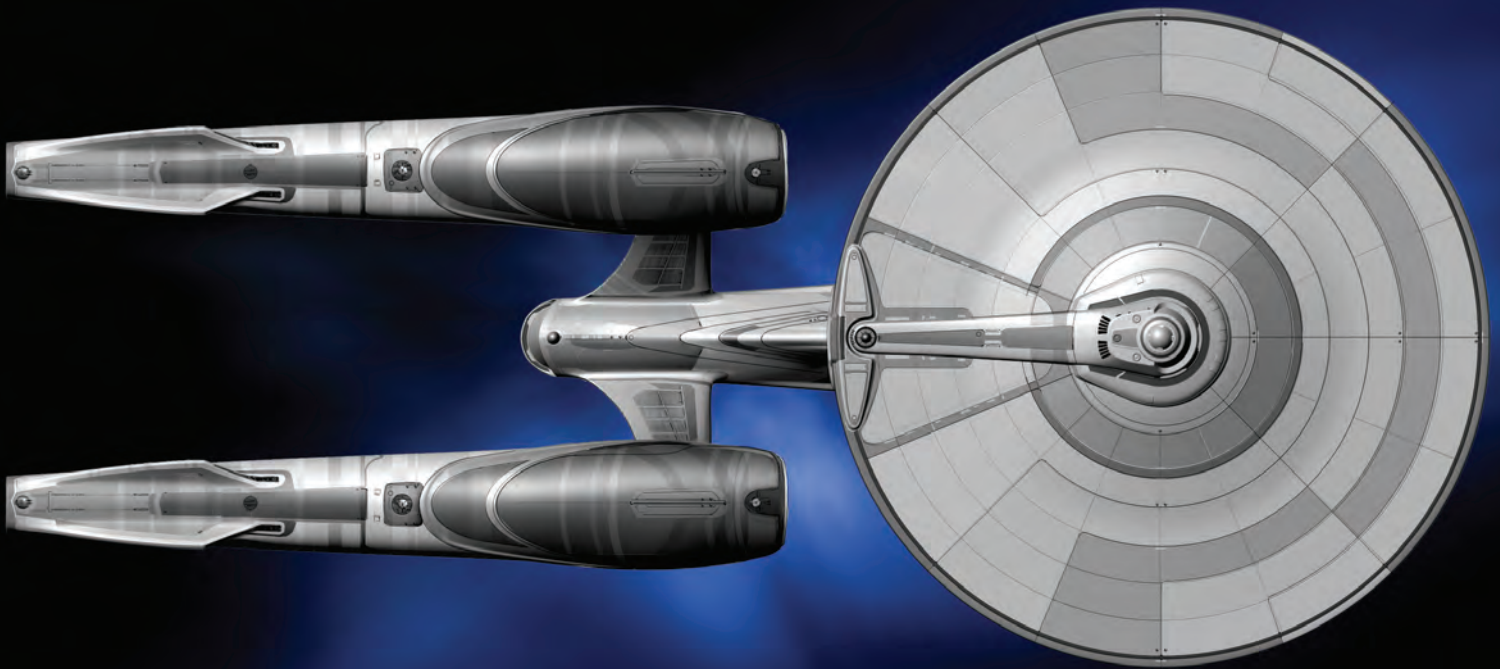
▲ Once Chambliss and Abrams were happy with Ryan Church's approach to the design, his concept painting was sent over to ILM, who would be responsible for filling in all the details. They started by making a simple computer model and then looked for ways of adding details and making it consistent with earlier *Enterprises*.



▲ ILM looked at every aspect of the ship, from the size and shape of the different elements to the details that covered the surface.



Please see all notes on "eship.top" view.



recognizable. However, as Chambliss is quick to point out, while it was worth considering, such a radical departure from the original design was unlikely to work. "There would have been no point in making a new *STAR TREK* if the *Enterprise* were unrecognizable," says Chambliss. "If that had ended up being the case we might as well have called the film *The Incredible Voyages Of Five Young Space Cadets* and given them an entirely different space ship and world to exist in. It was important that whatever designs we came up with, audiences instantly see it as the *Enterprise*."

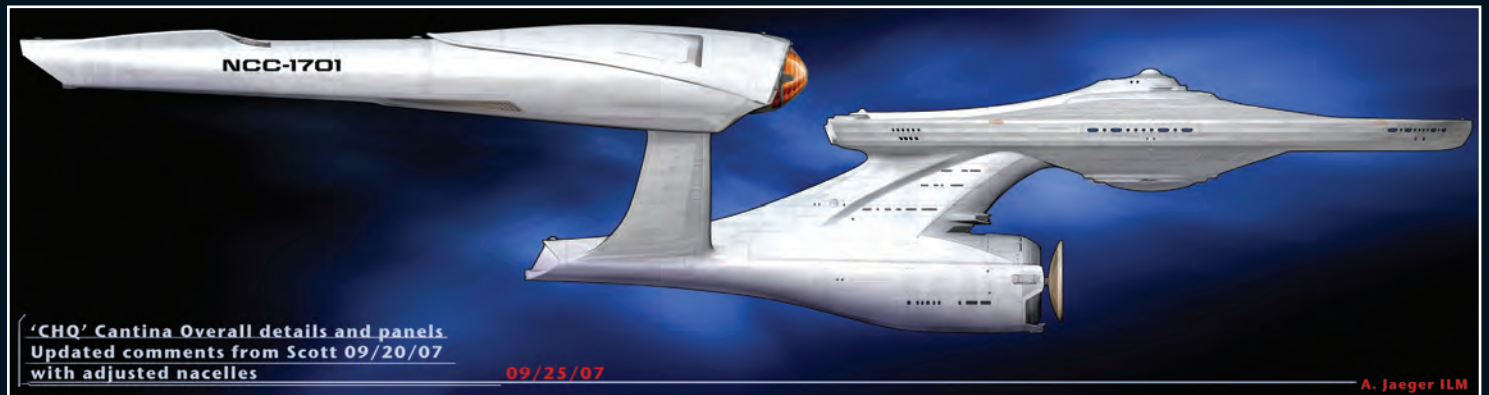
Luckily Church was already very familiar with the older *Enterprise* designs. "They're all really great and iconic designs and that made the challenge even harder," he recalls. "To create something that lived up to the high standards of all the versions that had gone before, and especially the very first

Jefferies design, which was just so bold." With this in mind, Church concentrated on coming up with designs that kept the basic shape of Matt Jefferies' original design but exaggerated certain elements of it, such as the curve on the underside of the engineering hull.

#### PUSHING AND PULLING

"The thing is there is only so much you can do with the shape of the original ship until it breaks down. For that reason I ended up going down many dead ends. I was working very sketchily and impressionistically compared to how I would usually work. But Scott and JJ like to work this way – they can see through the eye candy and detail passes and don't need that much information in a sketch to tell if it's going to work or not and how it will look on film."

▲ At one point, Alex Jaeger suggested that they should consider giving the *Enterprise* much heavier panel lines that would have made it look chunkier and given more of a sense of scale. ILM produced these drawings but the team decide to take a different approach.



▲ It was decided that the *Enterprise* should be smooth and gleaming white. A subtle aztec pattern was added to the surface to create a sense of scale.

"I played around with sleeker silhouettes and also more functional ones. I noticed that Scott and JJ tended to respond more favourably to designs that looked the most cohesive and sleek – more 'all of a piece' than the slightly tinkertoy feel you get from the original."

### EXPLORING SHAPES

One of the most obvious differences in Church's design is the larger, more bulbous nacelles. On the original *Enterprise* the nacelles had been a relatively simple shape. That had been restyled and given something of an art deco style for the movies. So Church started to look at different shapes that he could use for the nacelles and how they might attach to the main body.

"I was also keen to come up with a design that implied an interaction between the saucer and the nacelles so that it looked like the saucer was

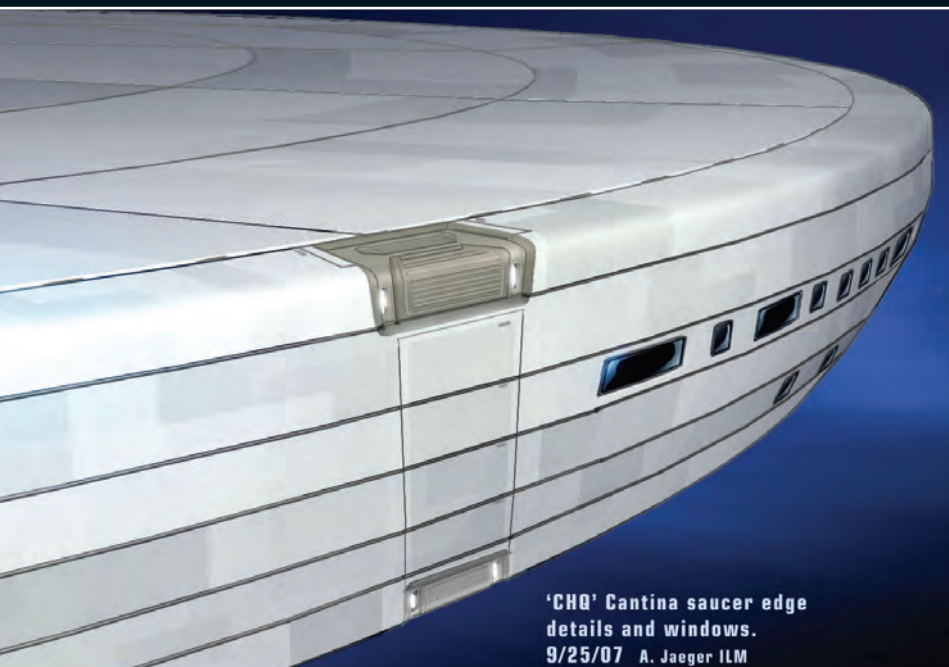
almost part of the propulsion system. I decided I wanted the scanner array to articulate and I had the idea that when the ship was in warp, or just out of it, that the nacelles would glow from inside from being superheated."

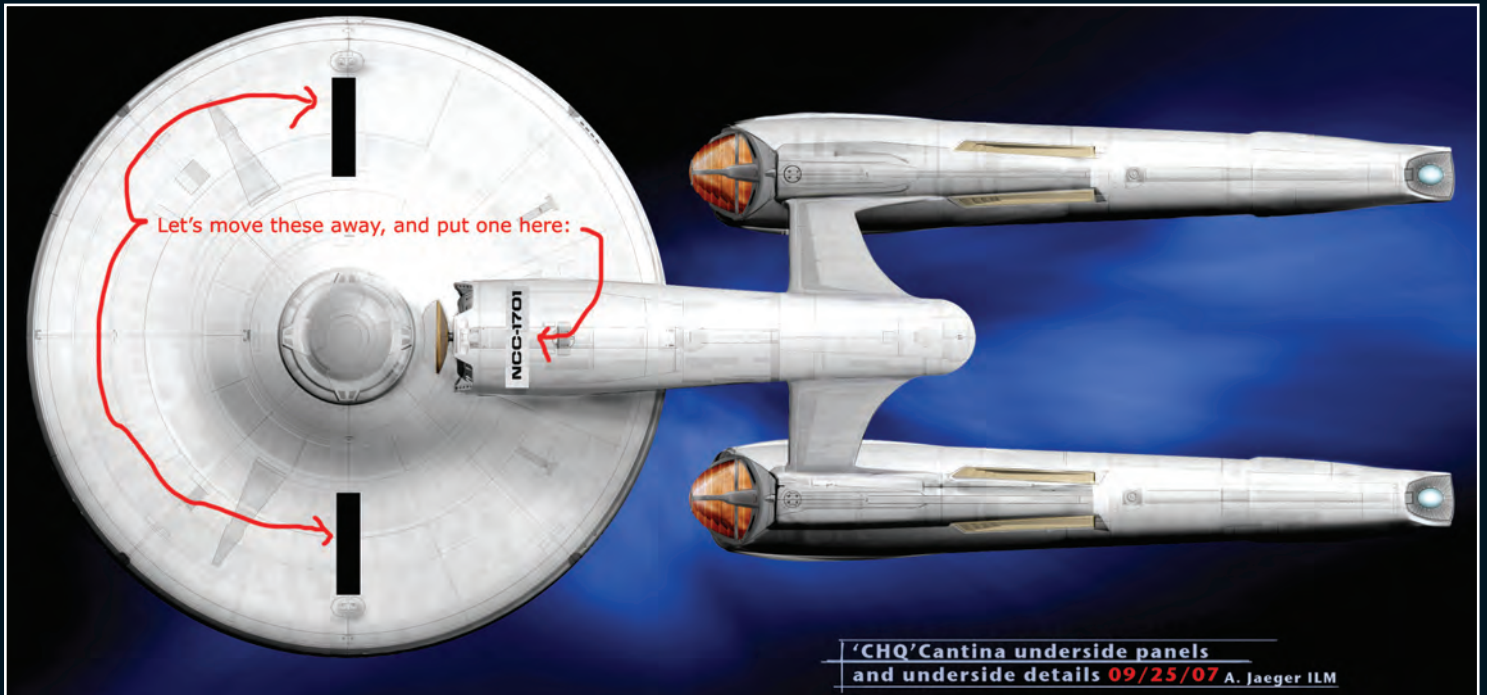
By the end of the concept design stage, Church had developed a ship that was recognizably a version of Jefferies' *Enterprise* but that had more sweeping organic lines and pronounced shapes. Whilst still smooth and sleek it had various raised sections such as cowlings on the nacelles, exaggerated separation lines on the engineering hull, a more swept back rear end, together with a more pronounced sweep towards the back of the engineering hull and the shuttlebay. At this point the design still had a very traditional deflector dish that could have come straight off the 1960s ship. He also produced a number of passes resolving details and playing with different markings, surface treatments, hangar and dish configurations before sending the package over to ILM, marking the beginning of the detail design process.

### ENTER ILM

The team at ILM was led by Alex Jaeger, who, as a young man had worked on *STAR TREK: FIRST CONTACT*, for which he had famously designed the *Akira* class. As he explains, ILM's job was to take a concept and turn it into a finished ship. "We were given Ryan's painting as a basis but JJ also gave us the mandate to do what ILM does best – make it look fitting to the film and give it all the history and the detail that a ship called the *Enterprise* deserves. Given that ILM had worked on most of the previous *STAR TREK* films and helped out with some of the TV shows we already knew what it takes to 'make it so'."

▼ No detail was too small for ILM who took care to add familiar elements such as RCS thrusters that had featured on earlier ships.





### A BADASS ENTERPRISE

As the VFX Art Director, Jaeger was charged with finessing every element of the ship – from the nacelles to the lighting, from the way the shapes blended, to the details of the shuttlecraft doors. All of which needed to be fleshed out.

“I did a lot of back and forth with Scott Chambliss during the beginning stages to make sure we were capturing many of the ideas he had as production designer, but ultimately it was JJ giving us as much freedom to do what we thought the most badass 1960s *Enterprise* might look like with a bigger budget. Between myself, John Goodson, Bruce Holcomb, and Ron Woodall, we

pooled decades of experience.”

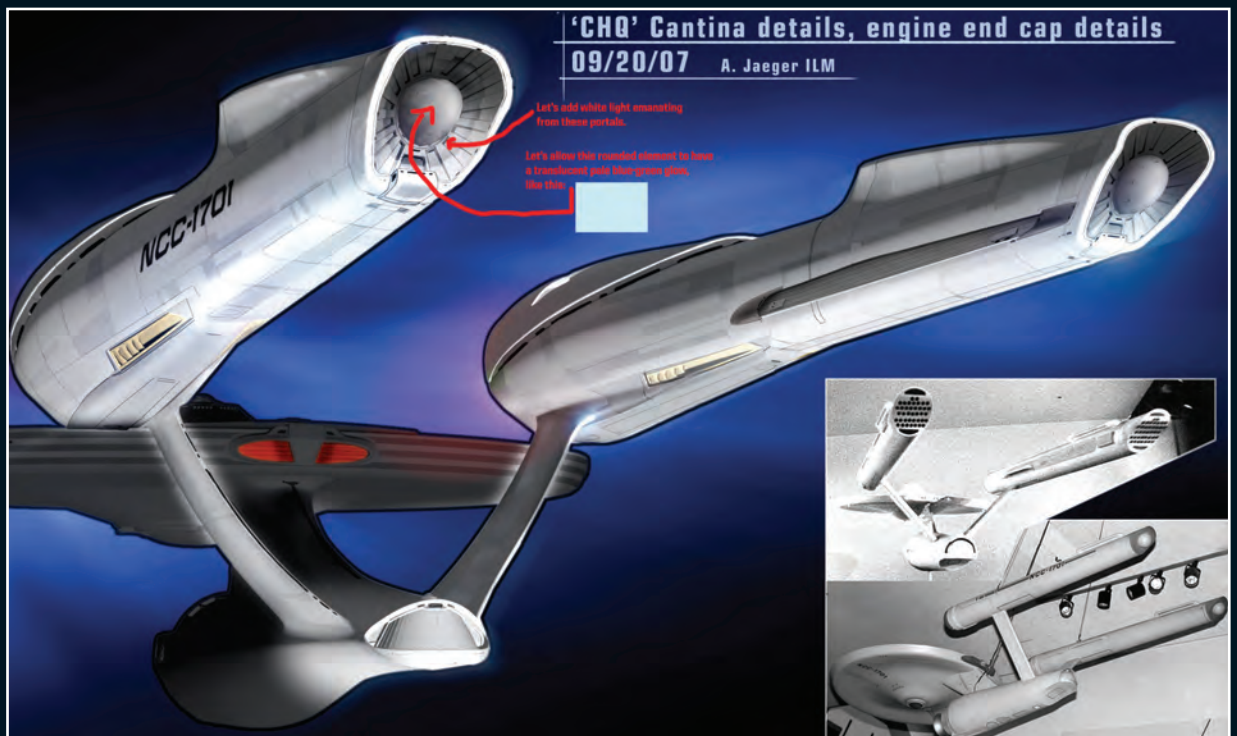
The first and biggest part of Church’s design that changed from the concept was the size of the nacelles. “Although JJ had given the mandate to make this a ‘hot rod’ the nacelles on the first model based on the concept were dramatically too large. It gave the ship a cartoonish feel and in the 2:35 aspect ratio of the film the Bussards looked overpowering from every angle. So we scaled them down in diameter and length. The Bussards also changed in form and colour. We did pursue the more orange colour with hints of movements within to mimic the original *Enterprise* pattern but it was still in development when we were playing

▲ Some details were moved to new positions, for example the registry was added to the underside of the engineering hull. The design continues to evolve and this wasn’t present in *STAR TREK INTO DARKNESS*.



◀ One of the ideas that could be seen in Ryan Church’s concept artwork was that the nacelles would light up in some way. Exactly how would be left to ILM.

► One of the things that ILM put a lot of work into was the design of the warp nacelles and they refined the design of both the front and the back. As this concept drawing shows, they always referred back to Matt Jefferies' original design, which provided them with inspiration.



with the black hole effects. In some of the lightning frames were a few flash frames where the colour of the ship was inverted. This showed the Bussards as dark with a bluish white tornado in the middle. We all knew it was a complete fluke but we also all knew that it looked pretty cool and JJ agreed.

"When the Bussards changed to the blue it helped the whole design to gel better. Then there was the tail end of the nacelles, which in the model were just flat cut offs. I researched the various *Enterprises* and designed a hybrid end cone that we could also light up."

The shape of the ship was also refined with a

vast number of subtle form changes and proportion adjustments taking place during the modeling process. "As well as changing the size of the nacelles the support struts had to be adjusted, with various sweep angles being considered until the right one was finally selected. Subtle adjustments were also made to the curves of the ship in order to give the body more tension and flow with the final shape becoming a more taut, lean and sexy form that evoked the original while at the same time giving it a new matured edge."

In creating a sense of scale, Jaeger was also keen to ensure that some of the traditional details

► At this point the design of the Bussard collectors at the front of the nacelles was a direct tribute to the original 1960s TV series and orange energy could be seen swirling at the front of the nacelles. ILM took the opportunity to add more sophisticated animation effects, but something about the orange colour didn't seem quite right.





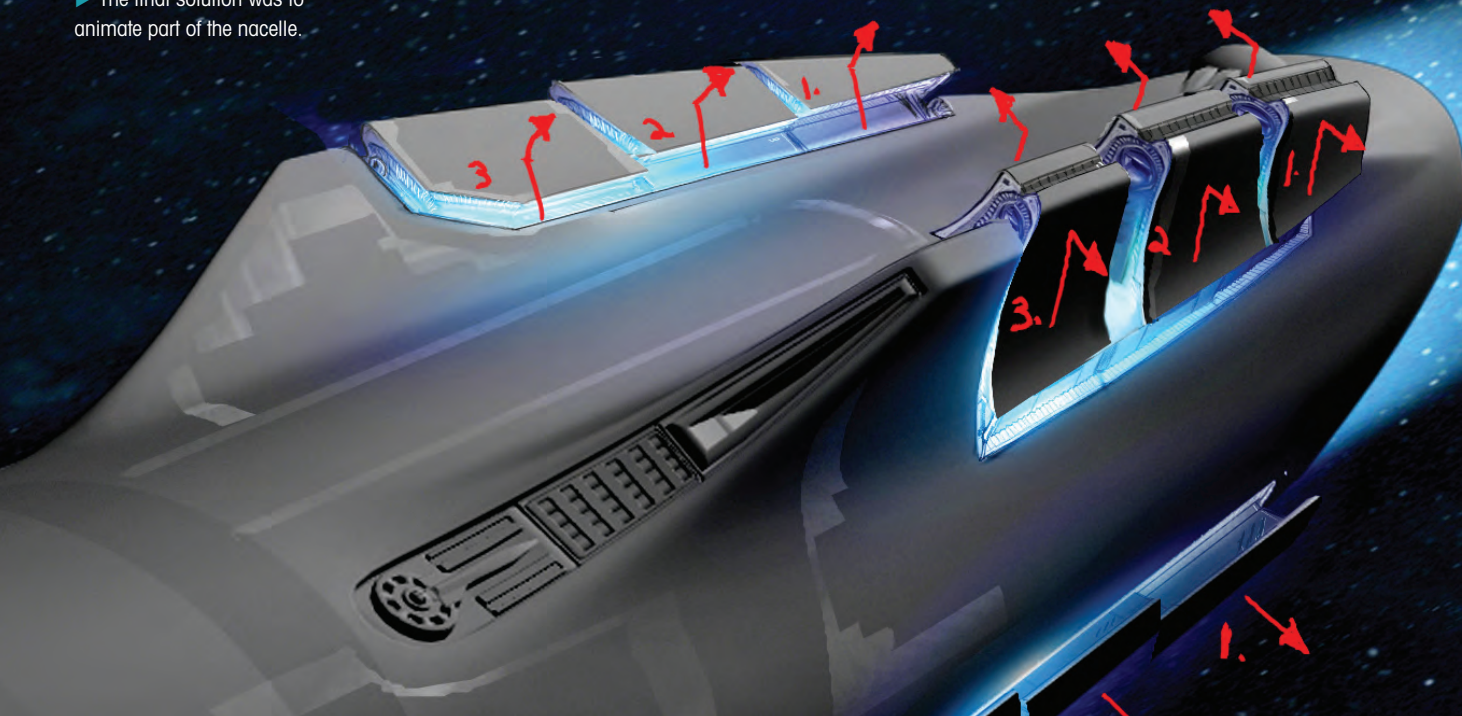
► The VFX team looked at several different ways of having the nacelles light up when the ship was travelling at warp.



► More than half a dozen designs were produced that showed different ways that the rear of the nacelles could come to life.



► The final solution was to animate part of the nacelle.



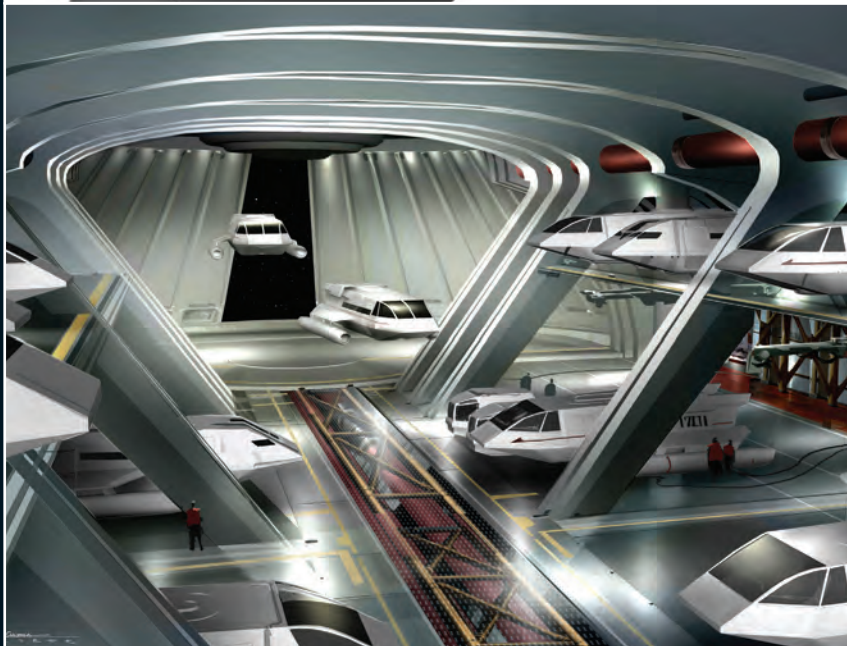


◀ The shuttlebay ended up having a profound influence on the size of the ship as a whole. The *Enterprise* was originally intended to be much the same length as the original TV version but this made the shuttles seem disconcertingly large so the size of the ship was doubled.

gained a new sophistication. For example, they upgraded the sensor dome on the bottom of the saucer. “We were true to some very iconic details but I wanted to make sure the dome had some structure and internal detail that we would see in the few fly-by shots. So I imagined it was a slightly tinted and beveled glass dome, much like an old lighthouse spot lens. And then inside would be an array of sensors that we would see backlit and refracted through the surface. Another scale cue I added was the way the ship illuminates itself. Thinking of the *Enterprise* as a modern building, and taking account of its size, I added a bank of stadium lights to the docking station as well as the flood lights on the ship.”

#### SENSE OF SCALE

At the same time as they were working on the shape of the ship, Jaeger and his team were experimenting with different approaches to the surface texture. “The original brief was that the ship be almost shiny white with very little panel break up. That version was quickly passed on for the more traditional subtle panel lines and flecks of iridescent pearl panels.” Jaeger’s team even considered a more high contrast version, much like





◀ ILM's final agreed version of the new *Enterprise*, complete with sophisticated, multi-toned deflector dish and the familiar aztec pattern that is a feature of almost every Federation ship.

the *Enterprise-E*, but this was quickly turned down in favour of the more subtle scheme.

The team also looked at ways to give the ship moving parts. Abrams had made it known that there were a number of animation effects that he wanted to see happen before the ship would go to warp. At the same time Scott Chambliss had requested that the portholes at the back of the nacelles glow like floors in an office building.

### MOVEMENT AND COLOUR

"JJ wanted a more physical transformation of the ship, something that made it obvious that the ship was about to enter warp speed. So the idea of vents or panels popping out on the trailing edge of the nacelles was explored in conjunction with a change to the deflector dish. The deflector dish would extend its central spire and, at the back of the nacelles, larger sections of the exhaust port would slide open in sections."

As the ILM team worked, various elements changed colour. On Church's original concept, the deflector dish was called out as being copper but as the design process progressed that seemed

to look dated so it was given a more neutral colour and the blue lighting was added. ILM also added a hidden light source effect – putting lights behind the panels, with the resulting spill onto the dish surface giving it a more modern feel.

After having nailed the details, the one thing that continued to be in a state of the flux was the actual size of the ship. The design was originally much the same size as the *Enterprises* that had gone before but when it came to filming a shuttle approaching it or seeing it parked in a field in Iowa the results were far from impressive.

"We had shots involving the shuttlebay which was portrayed as being a massive, multi-level space, which didn't fit into the ship at standard size. So the decision was made to almost double the scale, which seemed to make everything click with what everyone had imagined."

The finished model of the *Enterprise* couldn't be mistaken for anything else. Matt Jefferies' clear, bold lines show through and countless tiny details ILM added call out to the past, but it is also what JJ Abrams asked for – a badass, hot rod *Enterprise* that is ready for a new audience.

# STAR TREK™

