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SPECIAL ISSUE

DREADNOUGHT

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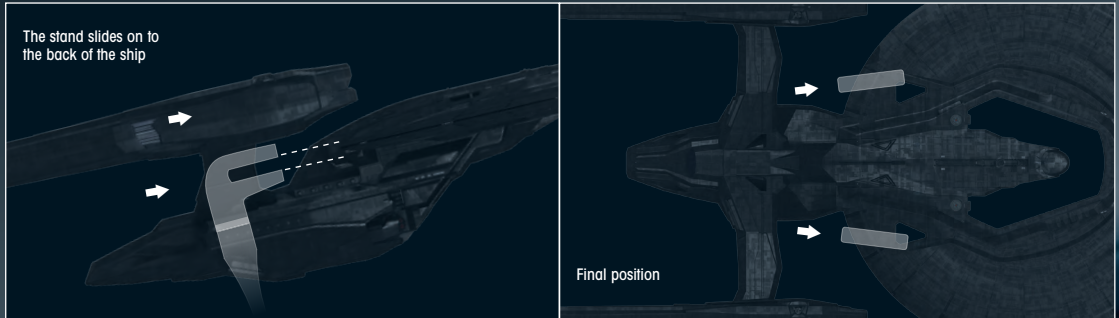
TYPE VII PHASERS

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U.S.S. VENGEANCE

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U.S.S. VENGEANCE

SPECIFICATION



CLASS: DREADNOUGHT

CONSTRUCTED: IO, JUPITER

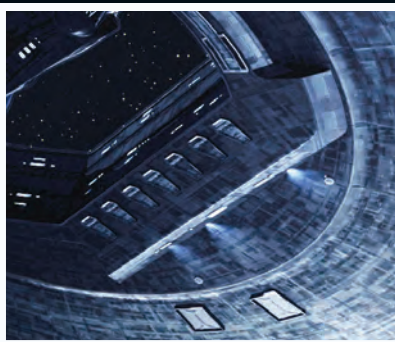
LAUNCHED: 2259

CAPTAIN: ADMIRAL ALEXANDER MARCUS

DIVISION: SECTION 31

WEAPONRY: TYPE VII PHASER DRONES

PHOTON TORPEDOES



▼ The *Dreadnought-class U.S.S. Vengeance* was designed to be a true warship and was one of the most heavily armed vessels in Starfleet's history.



U.S.S. VENGEANCE

Section 31 built the *Vengeance* in secret to prepare for a war with the Klingon Empire

The *U.S.S. Vengeance* was an unmarked Federation *Dreadnought*-class vessel that was built to be a true warship. It was designed by a genetically engineered human Augment known as Khan Noonien Sing under the orders of Section 31, a clandestine organization, which claimed to protect the security interests of the United Federation of Planets. It was heavily armed and used several experimental technologies, including stealth technology that fell short of a Romulan cloaking device but made the ship extraordinarily hard to detect.

The *Vengeance* was the only vessel of this class that was ever built. Khan described it as being twice the length of a normal Starfleet vessel, ten times more heavily armed and three times as fast. It was constructed and launched from a secret

construction hangar orbiting Io, a moon of Jupiter, under the orders of Admiral Marcus who was convinced that war with the Klingon Empire was inevitable and that Starfleet had to strike first.

The *Vengeance* was designed to be operated by a minimal crew, and could even be controlled by a single person if necessary. Navigation and propulsion could be operated with only simple voice commands. In contrast to the brightly lit, white-walled bridges typically found on most Starfleet ships, the bridge of the *Vengeance* was very dark with largely black walls. The same applied to engineering which was also designed to be run autonomously if needed.

The *Vengeance* was both launched and destroyed in 2259, when Khan turned on Section 31 and took control of the ship. Khan planned to crash it into Starfleet headquarters but was foiled by Captain James Kirk.



◀ Admiral Marcus organized the construction of the *Vengeance* at a secret base near Jupiter without the knowledge of Starfleet Command.



DESIGNING THE VENGEANCE

STAR TREK INTO DARKNESS's 'blackship' has a long and complicated history and countless unseen weapons...



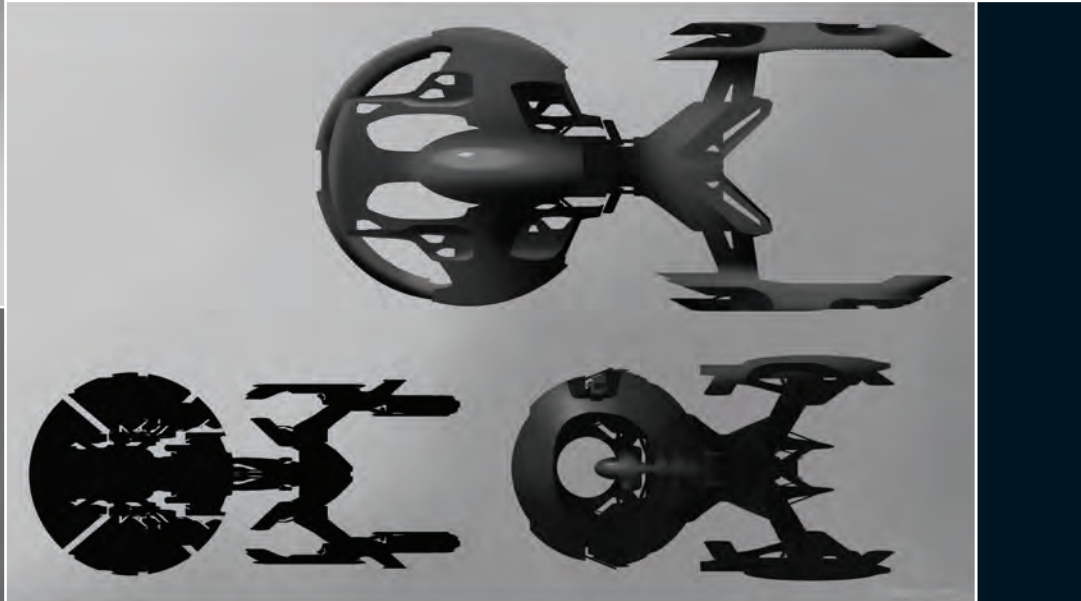


The *Vengeance* was always meant to be the evil *Enterprise* – a dark reflection of the ship we know so well. “The brief,” production designer Scott Chambliss explains, “was that it was to be a seriously badass, militarized variation on the *Enterprise*. Boiled down to its simplest metaphor, the *Vengeance* was a very sophisticated mega-weapon capable of outmaneuvering virtually any adversary it encountered.”

With this in mind, Chambliss outlined the broad

strokes of Abrams’ vision to concept artist James Clyne, explaining that the new ship was to be the antithesis of the *Enterprise*, that it would be black and menacing and significantly larger than Kirk’s ship. “But beyond that,” Clyne says, “there really was no brief. It was just - start there...”

Chambliss did, however, offer Clyne some inspiration, but rather than showing him another spaceship, he gave him visuals that suggested the kind of mood he was after. “Scott likes looking at



reference that isn't a one-to-one idea," Clyne explains. "He liked the idea of looking at these 70s supercars, specifically Italian cars like Lamborghini, which had these very sharp edges. We also looked at these elaborate Swiss Army knives that had a lot of different kind of form language that he liked. We used that as a jumping-off point."

"We took our time with this one," Chambliss says, "James did a few dozen very quick silhouette studies of how we could play with the *Enterprise*

shape, and we continued to narrow the selection and develop our choices until we agreed on the design you see in the film."

"They are very rough sketches," Clyne continues. "Quick simple, rough sketches that don't really give too much away. I looked at some of the older *Enterprises* and tried to understand the proportions and how one shape linked in with another, but at this point we were still looking for a feeling so it was about playing with a silhouette."

▲ A selection of James Clyne's early 'sketches' for the *Vengeance*. From the beginning Clyne was looking for ways to break up the familiar architecture of Starfleet vessels without losing their basic shape.



Clyne goes on to say that he wanted to move away from the deliberately artistic design of the *Enterprise*. "If you look at those early sketches you can see I was thinking about the aesthetic of the military. If you think about the military all the style is based on function; it has nothing to do with looking one way or the other. And, out of that functionality, inherently comes a certain look. It's typically a blockier version. It's more brutal; it's more simple."

As Chambliss explains, at this early stage they hit upon a technique that broke up the smooth, artistic lines of the *Enterprise*. "We found the ship's personality by introducing negative shapes into the main disc." For Clyne it was about trying to make changes without losing the fundamental layout of all Starfleet ships. "The first thing that I tried to do was get away from the circular disc shape and that's why I started punching these negative holes into it. Not all of the designs had negative space. We tried versions where the saucer was very low profile with very sharp edges, but there was something about the negative spaces that everyone liked."

CYBERNETIC SCORPION

Working with Abrams, Chambliss and Clyne identified a handful of designs that showed the most promise. "By the time we were down to our final three or four selections," Chambliss says, "our favorite was obvious." The approach he's talking about was still some way away from the final ship. In this version, the saucer was open at the front and hollow in the middle, with the broken edges forming pincers like some cybernetic scorpion.

This approach also produced a new and different feature. When Clyne had hollowed out the saucer he had left the bridge in place in the center, connecting it to the rest of the ship with a wide corridor. "The bridge was kind of cantilevered out and that meant it became a better vantage point. The idea being that the military is all about functionality, and this gave you the most visibility top and bottom. It was trying to think of new and interesting ways that we can have a function on a Federation ship that was a little different."

◀ Abrams, Chambliss and Clyne identified one approach where the front of the saucer was open and the bridge was cantilevered out, as having the most promise. Clyne would devote months to developing this idea.



▲ Clyne worked with CG modeller Tex Kadonaga to refine the design of the *Vengeance*. They concentrated on giving it a functional, industrial look that made no concessions to aesthetics.

Working back from the saucer, the ship retained the basic layout of the *Enterprise* but its sweeping curves were replaced with hard lines and sharp angles, reflecting Clyne's desire for military simplicity. To imply that the ship was both bigger and faster than the *Enterprise*, the nacelles were bulked up and made proportionally larger.

CHANGING SHAPE

The *Vengeance* retained this shape for some time, but there was something about the design that wasn't exactly right. "We did a lot of artwork showing it in that form battling the *Enterprise*," Clyne remembers, "But the shape required months and months of different iterations. We did versions A,B,C,D all the way through the alphabet! Through the process it became a little more simplified. JJ, I think rightly so, wanted to make sure that we didn't get too far away from that classic Federation look. In the end we hit it with the best of both worlds where we closed the saucer off so it

was a perfect circle, but we kept those negative spaces in the middle. I think that makes it even more interesting because it fits in the world rather than being something totally different."

Throughout the process, Clyne worked with CG artist Tex Kadonaga, who took his designs, and produced 3D models. "I love Tex," Clyne says. "He's awesome to work with. I would just rush something out and then hand it over to him. Then we'd go back and forth and really massage it. Obviously ILM came in and rebuilt all our nasty terrible models and made it look beautiful. But we concentrated on making sure that what we handed over was 90% there."

That process of massaging the design continued at ILM where the ship was built by a team led by Bruce Holcomb and digitally painted by Ron Woodall and John Goodson and their team. One of the biggest challenges they faced was working out how we would actually see the *Vengeance*. From the beginning, Abrams had emphasized that



▲ The version of the *Vengeance* with the open-fronted saucer survived for some time and Clyne produced several pieces of artwork that showed it in combat with the *Enterprise*.

the *Vengeance* was a stealth ship. “That meant,” Clyne says, “that it had a kind of black-ops military feel.” The most obvious manifestation of this was that the *Vengeance* was almost completely black. And since space is also black this presented the team with a challenge: how would people be able to see it?

“Actually,” Chambliss responds, “that was one of its best qualities. A black ship in black space becomes all about reflection, doesn’t it? There’s no problem in picking out a shape in that way, and there is visual excitement in the conceal then reveal of the light play. Think about this in another context: does anyone ever have a hard time seeing Batman at night?”

BLACK ON BLACK

Nevertheless, a considerable amount of effort went into thinking about exactly how the *Vengeance* would be made visible. As Goodson recalls, the team started by talking about the different approaches they could take, “Ron talked a lot of what ifs and tried to get a handle on what it meant to have a black ship in space. Does it disappear into the background? Does it have a

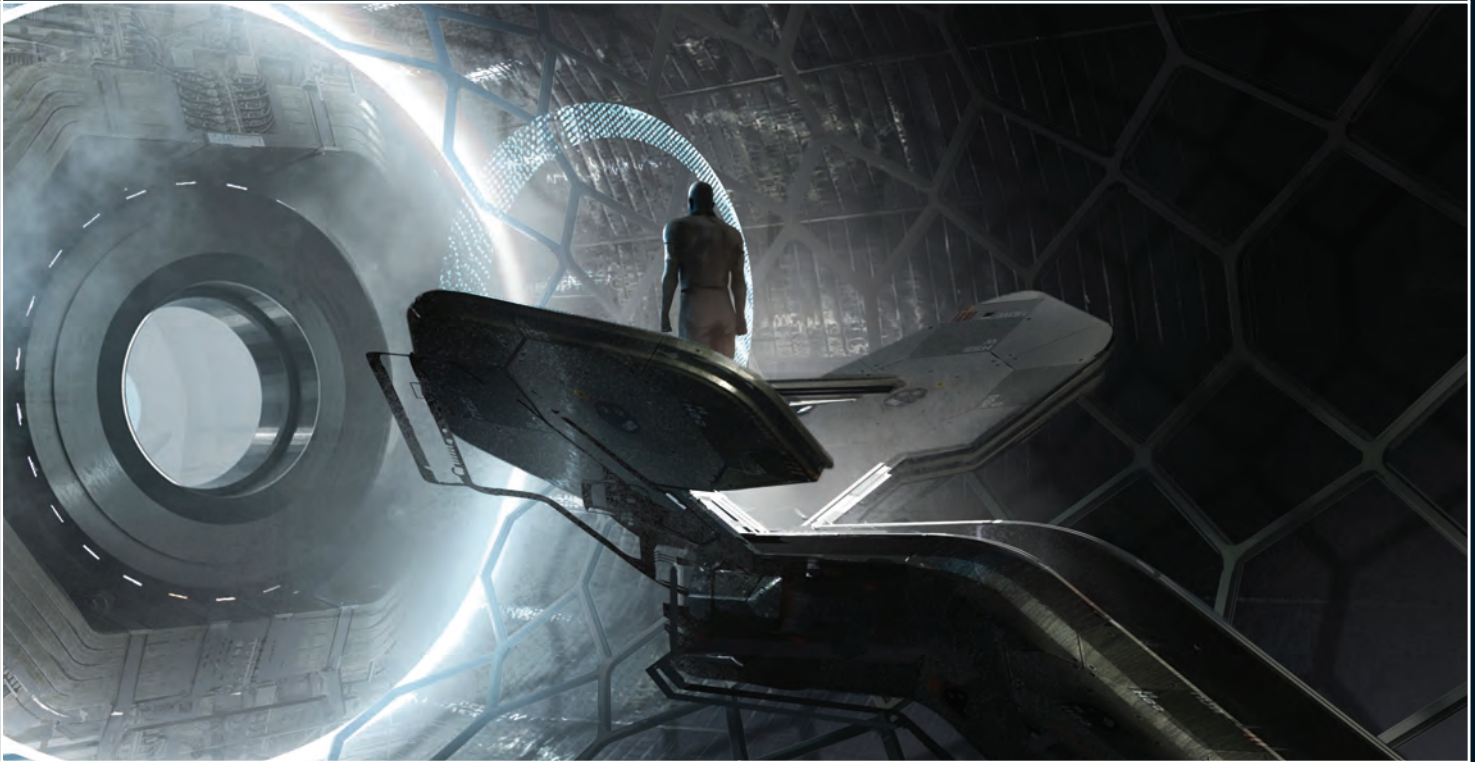
mirror finish that reflects the background?”

Eventually ILM decided to take their inspiration from the modern stealth bomber. As Goodson explains, this isn’t the black color it might appear to be, “If you see the stealth bomber it’s kind of blue and black and there doesn’t appear to be a great deal of surface detail. But someone took this black-and-white photograph of it with the sun coming across it, and it is amazing all the things you can see that are different. It’s because there are subtle sheen differences, there are different textures and things are painted different. When the light comes across it you read that detail.”

DARKNESS REVEALED

ILM took the same approach to the *Vengeance* – instead of painting it a single color they created a variation of the Aztec pattern on the *Enterprise* and covered the ship in it. They then went in and gave the different panels different levels of specularities (reflectiveness). This means that how the *Vengeance* looks very much depends on what kind of light you are throwing on it. In some lights it might seem almost invisible but in others it shows up very clearly and the Aztec pattern looks as if it

VENGEANCE Bridge Design



According to James Clyne one of the best things about Scott Chambliss "is that early on he has no inhibitions about what something should or shouldn't be." There was nowhere this had a greater effect than in the design of the *Vengeance's* bridge. "Originally," Chambliss explains. "I wanted it to look and operate in a very new way from anything we'd seen before. We developed three or four different approaches before JJ decided he wanted to stay pretty close to the *Enterprise* bridge sensibilities."

Clyne goes on to explain that at one point they planned to completely abandon the conventional bridge layout, "Some of the early ideas involved the ship being on multiple levels - you could see several floors up and several floors down. It was an open space rather than the confined cylindrical room that we're so accustomed to. It was more of a spider webbing of a structure."

But ultimately, Abrams decided that since the *Vengeance* was a dark reflection of the *Enterprise*, its bridge should be too.

So Chambliss had art director Kasra Farahani work out how to convert the *Enterprise* bridge. "Kasra led the pack on that. We made some clever design choices to help disguise the *Enterprise*, which in the end seemed quite successful. My only regret is that we didn't see more of this set on film."

Chambliss adds that no work is ever wasted, though. "I changed my attitude before returning to the Starfleet world! I'm actually quite excited by what we're doing on *STAR TREK 3*."



has a very high contrast.

"There is color variation in it, but it's not tremendous," Goodson reveals. "Mostly what you're going to read are the specular changes. There's kind of a silverish streak that might be 70 per cent reflective and then a black area that's 40 per cent reflective. That gives you that reflection sheen difference and that is the thing that shows up."

The *Vengeance's* stealth technology didn't end with the paint finish. As Holcomb explains, the

ship's surface was designed to reflect scanners.

"The idea was that if they were shooting some kind of scanning beam at it then it would bounce off the plate work. We wanted to make it so there were no real areas that any kind of scanning beam wouldn't bounce off. It always had to be a 45 or a 90-degree angle or it was completely flat."

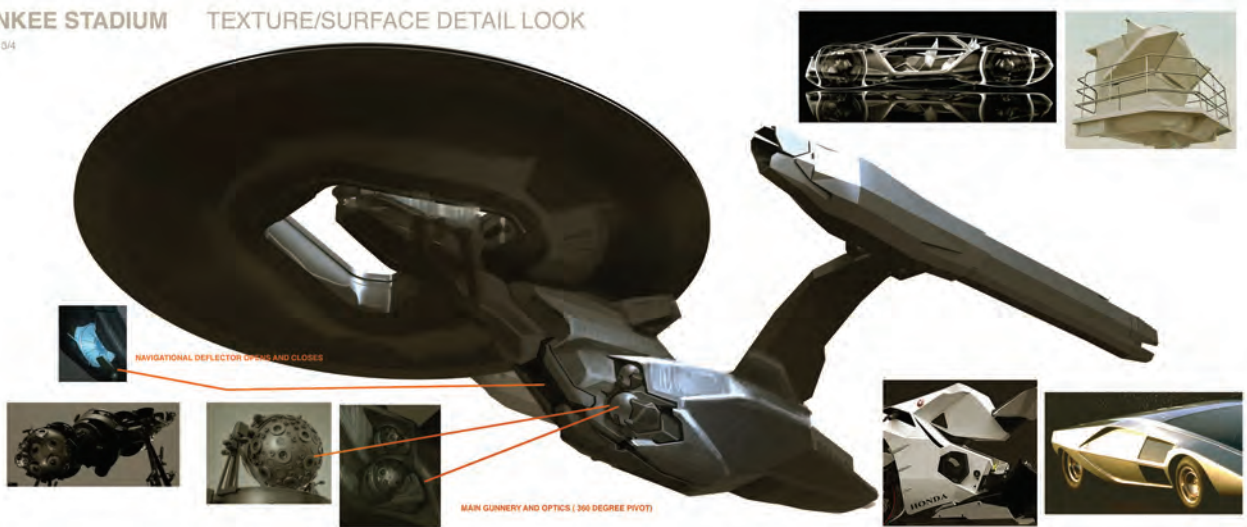
The team was also aware that years of *STAR TREK* lore had established that ships emit all kinds of radiation that can be detected by enemy technology. "There was the question of how it

▲▼ At Abrams' request, the art department closed up the front of the saucer, making the *Vengeance* look more like a conventional Starfleet vessel. Clyne points out that in his artwork, the ship was almost always shown against a black background - Abrams had asked for a black ship, and making it visible was always an issue.



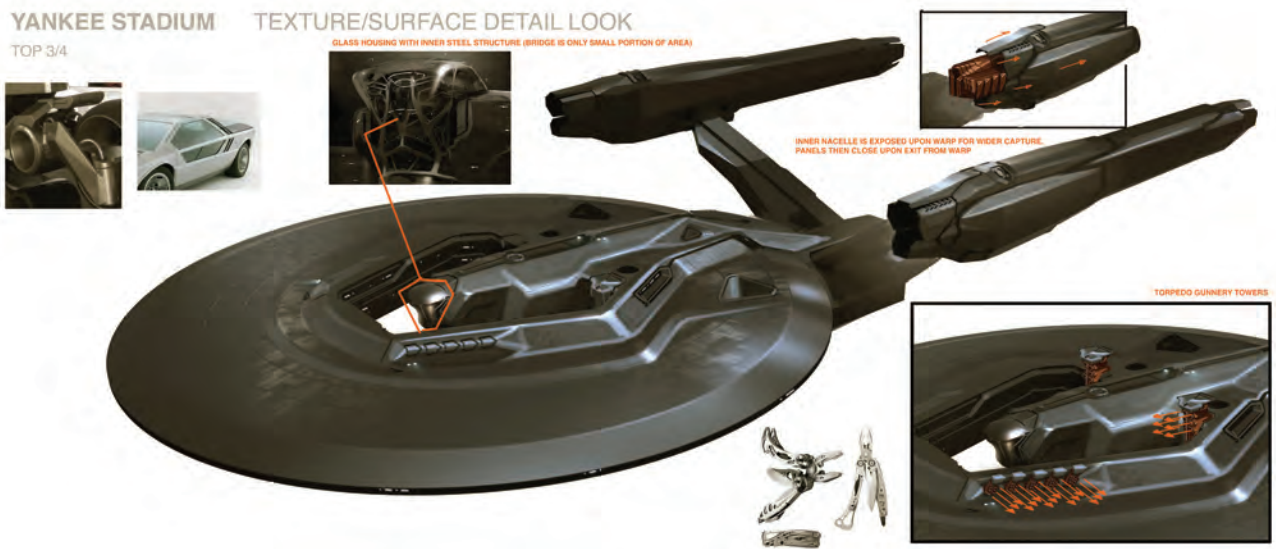
YANKEE STADIUM TEXTURE/SURFACE DETAIL LOOK

FRONT 3/4



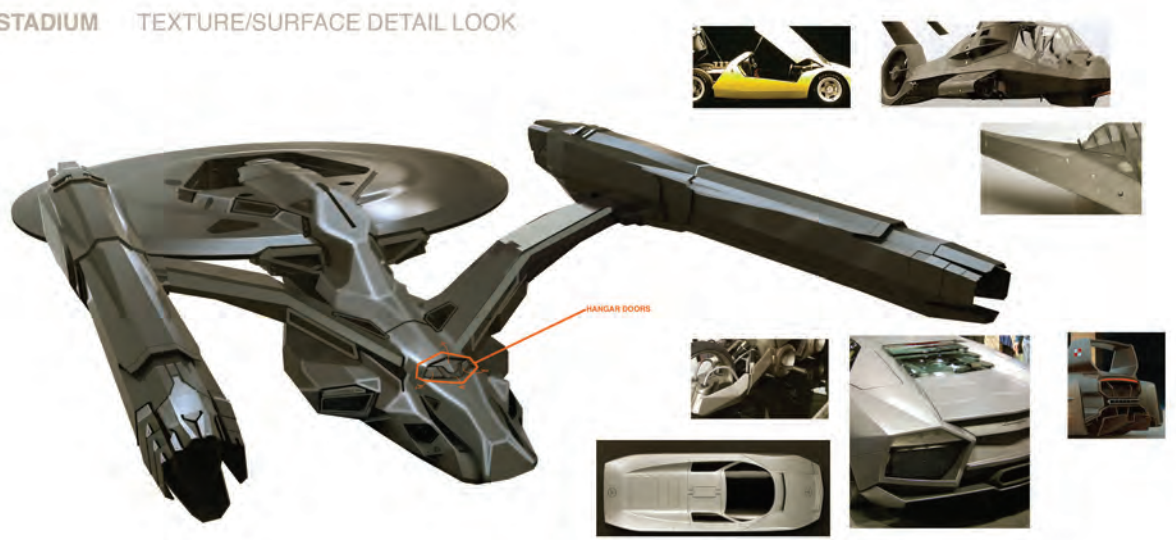
YANKEE STADIUM TEXTURE/SURFACE DETAIL LOOK

TOP 3/4



YANKEE STADIUM TEXTURE/SURFACE DETAIL LOOK

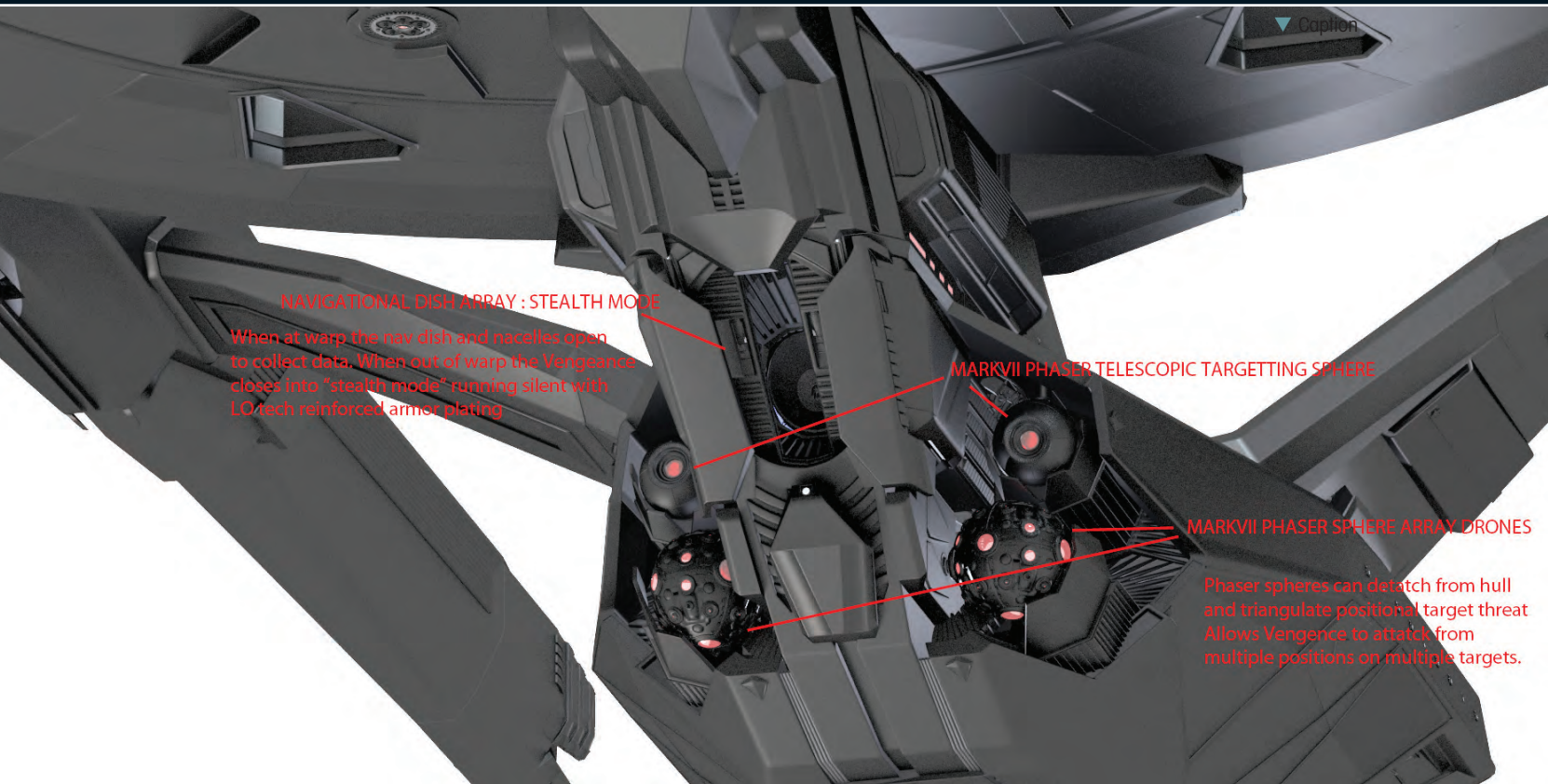
REAR 3/4



▲ Although Clyne and Kadonaga produced their own CG model of the *Vengeance*, the final, detailed version was left to ILM. When the art department

started to work with ILM they provided a series of sheets that showed the design inspiration, in particular, the detailing on Lamborghinis, and some

of the features such as multiple photon torpedo launchers that they planned to include.



NAVIGATIONAL DISH ARRAY : STEALTH MODE

When at warp the nav dish and nacelles open to collect data. When out of warp the Vengeance closes into "stealth mode" running silent with LO.tech reinforced armor plating

MARKVII PHASER TELESCOPIC TARGETTING SPHERE

MARKVII PHASER SPHERE ARRAY DRONES

Phaser spheres can detach from hull and triangulate positional target threat. Allows Vengeance to attack from multiple positions on multiple targets.

▲ Holcomb's team at ILM didn't just build a model of the *Vengeance* - they spent a lot of time thinking about the different features the ship would have and how they would work. As part of their work, they produced a series of annotated renders picking out various features.

would hide itself navigating through space," Clyne says. They decided that the ship needed a way of shielding as many different sources of energy as possible.

As Holcomb explains, "We came up with this great idea that when the ship was at warp the nacelle covers were open and the navigational dish was exposed, but when the ship dropped out of warp everything would close up."

"Some of the ideas," Clyne continues, "spawned from movies like *Das Boot* or *The Hunt*

for *Red October* - these big, military-class submarines had all these really fancy tricky and fun ways of hiding themselves."

UNSEEN WEAPONRY

It was also a given, Clyne says, that the *Vengeance* would be heavily armed. "Obviously guns were an important part of it from an early stage! JJ wanted to see various ideas of weaponry. But it being a very large ship I didn't want some massive 700m-long gun on it. I wanted



▲ One of the ideas that ILM developed was that the *Vengeance* would have to hide itself when it wasn't travelling at warp. One of the ideas they developed with Clyne was that the navigational deflector would be covered up when it wasn't needed, reducing the emissions an enemy could detect.



to keep it all tucked away and more stealthy. My thinking was that stuff like that would pop out in a surprising way.”

Most of the work on the weaponry was done at ILM and Holcomb admits they may have gone a little too far. “You never got to see the ship long enough for it to show off some of the cool things that we came up with!” Specifically, Holcomb’s team designed several weapons systems that either didn’t make it into the movie, or appear so fleetingly that you would be hard pressed to know

they were there at all.

PHASER BALLS OF DEATH!

“We designed eight to 12 different kinds of weapon systems,” Holcomb laughs. “One of the coolest things were these phaser balls. There were spheres on the side of the navigational dish that were always part of the concept drawings. We dreamt up this idea that they were phaser drones that could detach from the ship. You’d have the main ship and then you’d have these two balls

▲ One of Holcomb’s favorite weapons systems were a pair of phaser drones that were designed to detach themselves from the front of the ship and attack an enemy before returning. One of them makes a fleeting appearance but they were barely seen.



▲ ILM and Clyne also provided the nacelles with cowlings that would conceal their energy when it wasn’t needed. In this case, the idea was that the front of the nacelle, which housed the Bussard collectors, would open up when the ship needed to travel faster than light speeds.



▲ As Clyne's concept artwork shows, the *Vengeance* was always destined to meet its end crashing into San Francisco. As part of the sequence ILM had it crashing into Alcatraz as a nod to one of JJ Abrams' TV series.

flying around triangulating their fire on the *Enterprise* from three different directions. We thought that was really cool. But that never came to pass. We did use them but you never knew what it was! There's this one ball that does go flying past the *Enterprise* and fires a torpedo at it. We called them the drone phaser balls of death!"

The *Vengeance* also had massive rail guns that dropped down from the underside. "The rail guns are really neat. One of the biggest conversations we had were to do with these things called arcing phasers where you could see the beam bending. Originally the reason why they were arcing is they were fired at warp. Of course, when you're at warp you're traveling faster than light. These phasers could even travel faster than that and that's why you got this kind of bending and warping effect. It was this gag that JJ liked visually so we kept it even when we weren't at warp.

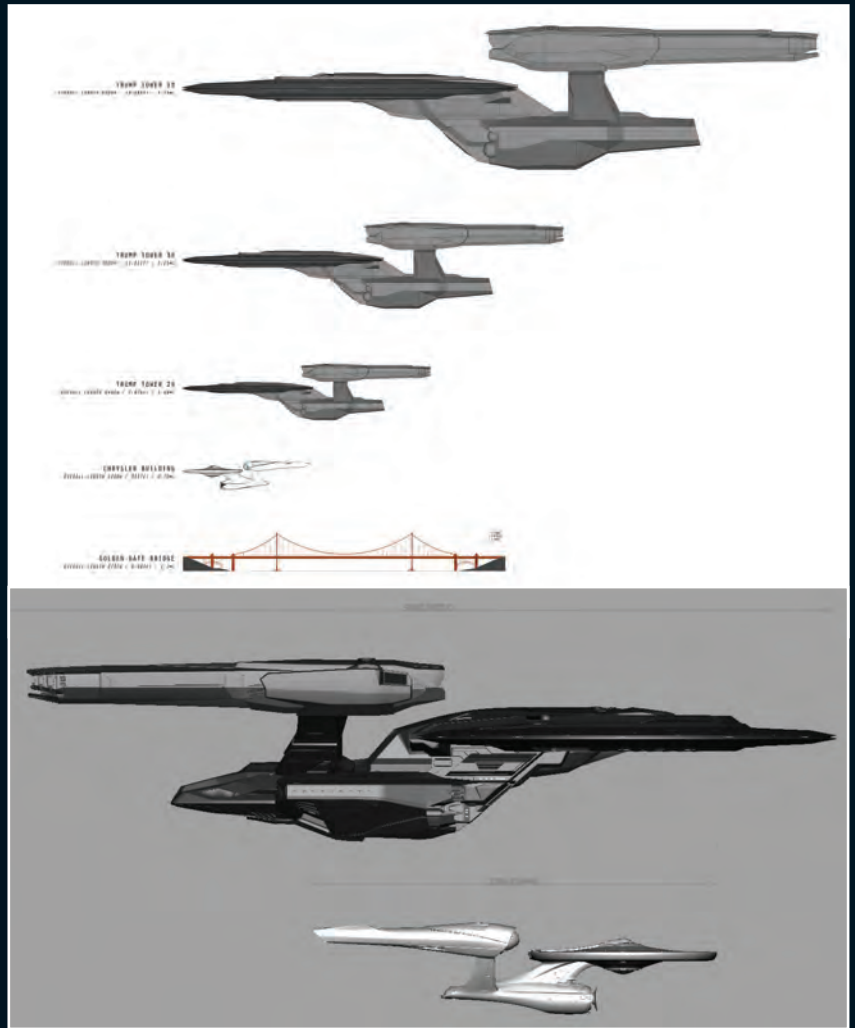
"Then we had these solid projectile weapons we never got to use. They were these big spinning disc

things that were shot by the rail gun. They didn't have any energy and the idea was that they would go straight through the ship without having to deal with any kind of electromagnetic shielding. And we had the neutron torpedo that when you launched it, it would launch all these other torpedoes as well."

But in the end most of these ideas were left on ILM's computer screens and never made it to the movie theater. Despite Holcomb's enthusiasm the *Vengeance's* battle with the *Enterprise* is actually relatively short. "I remember being told quite a few times, 'Bruce, the movie's not about this ship! We're not going to see it that much' and then they blew it up, which was really sad!"

MASSIVE SHIP, MASSIVE CRASH

To be more accurate, Abrams crashed the *Vengeance* into San Francisco and this influenced how big it was. Abrams had always said that he wanted the *Vengeance* to dwarf the *Enterprise*,



but how much bigger would it actually be?

"We did some different variations showing here's our *Enterprise* and here's the *Vengeance*," Clyne remembers "here's two times, three times, we even went up to eight times which was miles long."

"Initially when it came to us," Holcomb recalls, "it was around 4,000 feet long. I got this image where it was the size of the entire Golden Gate bridge! We had to reduce that. We put it nose to nose with the *Enterprise* and it was just so big that we reduced it down to just double the size of the *Enterprise*. When we had it at a little bit less than 4,000 feet it became super expensive to crash it into San Francisco, just because of the amount of stuff that we crashed it into."

Even after it had crashed, the story of the *Vengeance* wasn't over. As Goodson explains, it's one thing to paint a ship to be seen in space from a distance, but another when you see it in broad daylight on the surface of a planet. "Right towards the end we had the shots where the ship has

crashed and Khan has to jump out of the viewscreen. That hull was just painted the generic texture and it wasn't good enough."

Fortunately, Goodson had visited the East Coast that Christmas. He had found himself with a 30-minute window and had taken the chance to visit the Space Shuttle Discovery at Dulles Airport. "I'd gone in and got some great pictures. I was fascinated with the level of surface texture – it's got thermal blankets, and tiles and scorching and just all kinds of detail."

So six weeks later, when they needed to paint the hull around the viewscreen, he was able to take those images and map them into the surface of the ruined ship linking Abrams' blackship with a very real 20th-century spacecraft.

The *Vengeance* had emerged from the darkness to end up broken and battered in the San Francisco bay, but it ushered in a new era for *STAR TREK*, and left a seasoned Captain Kirk ready to start his first five-year mission.

▲ The size of the *Vengeance* was in flux for a long time with the art department suggesting that it could be as much as eight times longer than the *Enterprise*. The final agreed scale pegs it as twice the length of Captain Kirk's ship.

STAR TREK™

