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**NX-CLASS REFIT
SPECIAL ISSUE**

CLASS: NX-REFIT

OPERATIONAL: 2150s

LENGTH: 225 METERS

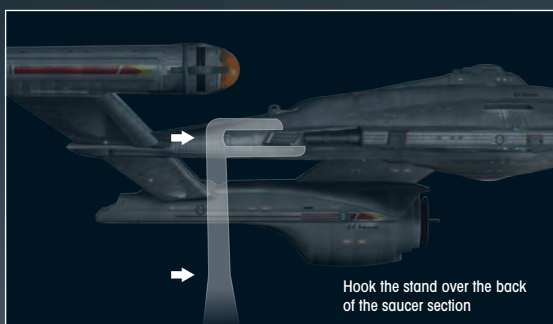
CAPTAIN: ARCHER

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NX CLASS REFIT

SPECIFICATION



CLASS: COLUMBIA

REFIT: 2156

DECKS: 7

CREW: 85

MISSION: SPACE EXPLORATION

WEAPONRY: PHASE CANNONS

PHOTONIC TORPEDOES





THE REFIT

ENTERPRISE

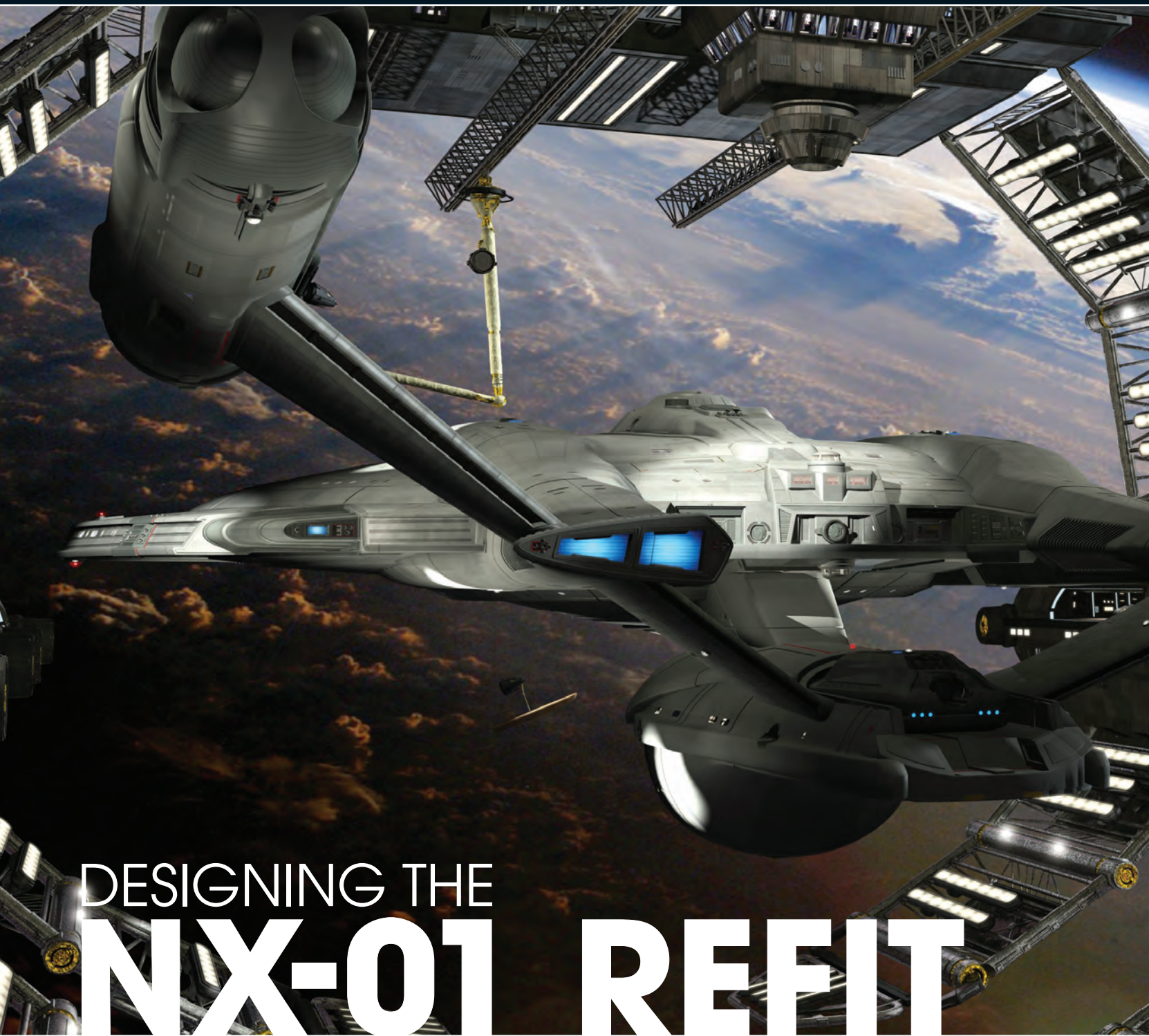
In an alternate reality, the *Enterprise* NX-01 underwent a major refit to fight the Romulan Wars...





NX-01





DESIGNING THE NX-01 REFIT

When he designed the *Enterprise* NX-01 Doug Drexler was already dreaming that it would evolve into something else.

The *Enterprise* NX-01 refit is the *Enterprise* that could – and many people believe should – have been. It’s the closest thing there is to a canon starship that doesn’t qualify: it was designed by the NX’s original designer and built by a

member of the *ENTERPRISE* VFX team; it has appeared in official calendars and on book covers but, since it has yet to appear on screen, it remains a fascinating part of the unofficial *STAR TREK* universe.



As its designer Doug Drexler explains, its origins go back to the time when he was designing the *Enterprise* NX-01. The producers' brief called for a ship that was both instantly recognizable as an *Enterprise*, but at the same time had a unique silhouette that couldn't be mistaken for anything else. This was much the same brief that every designer of an *Enterprise* had been given, but

each time the question had been asked, it had got harder. This was now seventh *Enterprise* to be designed and Jefferies' original design had already been pulled in many directions. In the *ENTERPRISE* art department, production designer Herman Zimmerman and concept artist John Eaves had been working their way through designs without finding anything that would satisfy the

▲ The *Enterprise* NX-01 refit made its debut in the 2011 'Ships of the Line' calendar, in this image which showed it being upgraded in spacedock.



▲ Drexler's earliest designs for the NX-01 were done in the evenings at his house. He always tried to refer back to Matt Jefferies' work, often revisiting ideas, like having the engines form a ring, which Jefferies had rejected when he was designing the original ship.

executive producers Rick Berman and Brannon Braga. The pressure was on them to start designing the sets, so Zimmerman had to look for someone else to work on the ship. Scenic art supervisor Mike Okuda suggested that the answer might be to bring a former member of the art department, Doug Drexler, back from Foundation Imaging, where he had been working as a CG artist. Zimmerman embraced the idea but, as Drexler remembers, there was a problem.

"When Herman called me, I said, 'I can't just leave. I have to give them at least two weeks notice.' He said 'Okay, what time do you get off work? I'll come to your house.' So for two weeks I'd come home exhausted from work at Foundation and Herman would be sitting on my front porch. He would come in and we'd work for a couple of hours every night."

The *Enterprise* they designed together had all the familiar elements of Kirk's ship, including a



secondary hull. But, because *ENTERPRISE* was set 100 years or so before the original series, it was smaller and more primitive. “That design was approved,” Drexler says. “It was close in configuration to the *Constitution* class but when you looked at it you knew that it was not as ambitious as Kirk’s ship. Berman approved it and that was going to be the ship. Then someone came in and said, ‘Wow that’s great. It’s just like Kirk’s ship!’ and that was the end of that.”

BACK TO THE DRAWING BOARD

The production was now left with a real problem: they no longer had a design for their ship and time was running out. They needed a solution, and quickly. As Drexler recalls, VFX producer Peter Lauritsen suggested that they used an existing design for a small ship – the *Akira* class – which had a saucer and nacelles but no secondary hull.

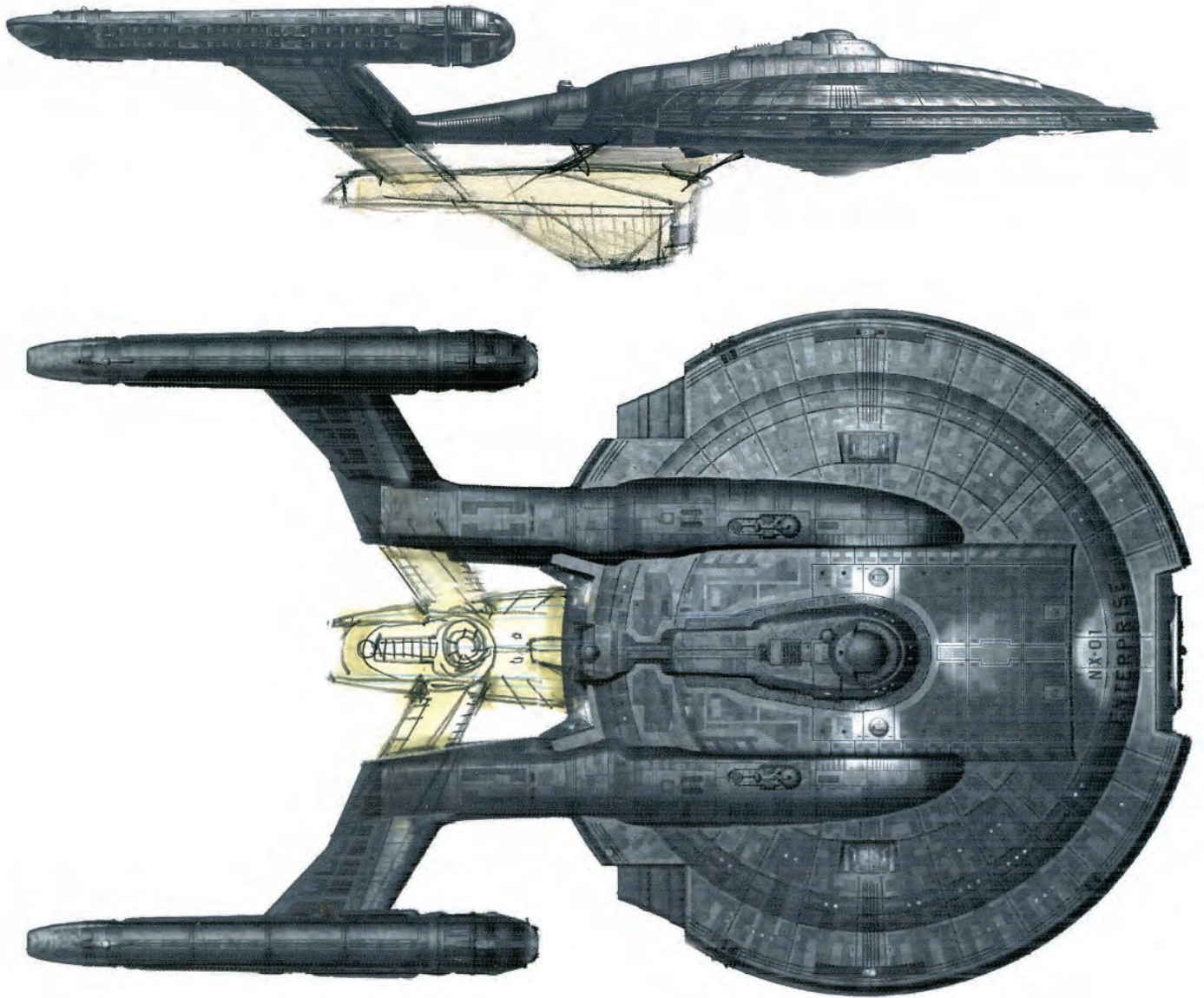
“That,” Drexler says, “was a really good idea

because it gave us somewhere new to go. It was an unusual choice and it shook up a lot of people, but I think that whenever you do anything interesting or unusual it always shakes people up. Roddenberry was never afraid of that.”

To Drexler’s mind the thing that was really interesting about the idea was that it suggested the starship design was still in its infancy, and that in a sense Archer’s ship would be incomplete. “It showed an evolution: the NX is like a tadpole that doesn’t have its legs yet. I loved that idea.”

The next step for Drexler and Zimmerman was to take the basic design of the *Akira* and rework it so that it had echoes of Matt Jefferies’ original *Enterprise* from the 1960s. At the same time, they looked at the design of 20th-century spacecraft, to make sure that their work would suggest that the NX was a halfway house between today and Kirk’s era. Drexler is very clear that Okuda made an enormous contribution to nailing down these

▲ Zimmerman and Drexler eventually came up with this design which was initially approved by the executive producers. However, they subsequently decided that it looked too much like Kirk’s ship.



▲ When Drexler realised he could upgrade the NX-01 for its appearance in the 2011 calendar, he started by sketching over renders of the existing ship to show how it would evolve.

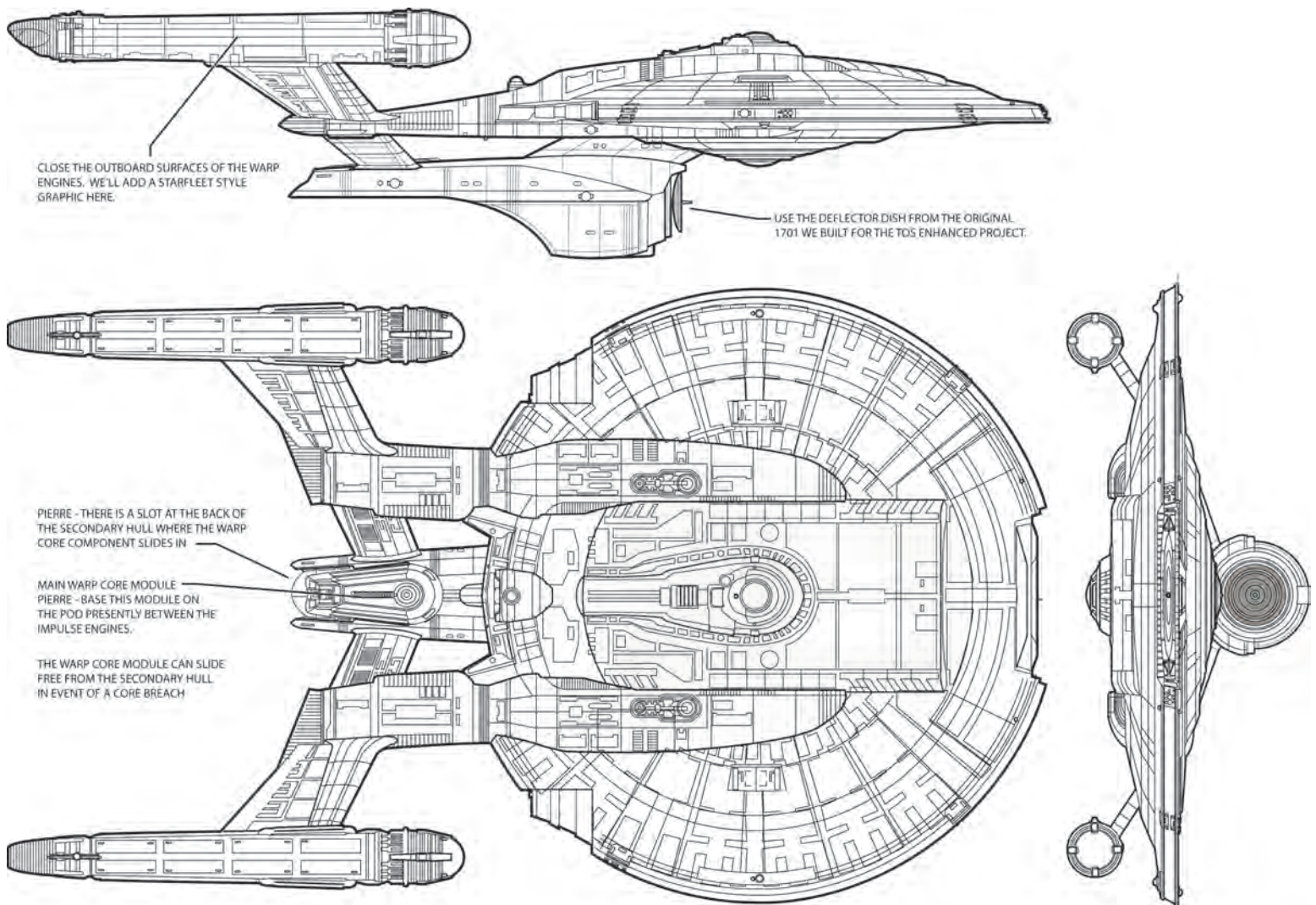
details. “Mike Okuda and I sat and talked out every little bit, even down to the airlocks and how they operated. There was nothing that was just put there because it looked cool. We were partners on the ship, kind of like brothers, and we get along so well, we love talking *STAR TREK* and we spent lots of time discussing all the details.”

PLACE IN HISTORY

As they worked on these elements, Drexler could see the ship transforming into something much closer to the original series designs. “One of things that I thought was most important about the NX

was to give a feeling of evolutionary growth. I love the *Akira*, but I like the NX much better because it’s closer to what Matt Jefferies did.”

But even then Drexler knew that that evolution wouldn’t be complete until the NX had a version of every element of Matt Jefferies’ *Enterprise*. “I always had the idea that they would add a secondary hull to it. And as I was building it, I would take a secondary hull and place it under there to make sure that it would look good if we ever decided to do it. That’s why it looks so good with the secondary hull on it: it was thought about. It was always in my mind.”



For now, however, adding an engineering hull was a step too far and Drexler concentrated on giving the producers the ship they had asked for. Unlike all its predecessors, this *Enterprise* had been designed entirely in CG, with Drexler building an increasingly detailed study model, which was now passed on to *STAR TREK* VFX house Foundation Imaging, who would use it as the basis for the CG model that would be used for filming.

"It was given to Pierre Drolet to build the final version and he really went into all the crevices and made sure everything was perfectly blended together and joined."

The fact that all the effects shots using this *Enterprise* would be made in CG was not lost on Drexler. Traditionally, *STAR TREK* had invested heavily in creating a library of VFX shots of the ship that could be used again and again. There are, after all, only so many angles that you can shoot a ship from. However, this meant that you couldn't alter the ship in any way because it would instantly render the library of shots worthless.

THE CHANCE FOR CHANGE

"With *ENTERPRISE*, it was all CG, so the stock footage wasn't as important," Drexler explains,

▲ When Pierre Drolet built the model of the refit, Drexler gave him these blueprints showing what he wanted to do.



▲ This image shows the refit alongside Kirk's ship, revealing how carefully Drexler had echoed elements of the original design.

"You can afford to make new CG shots so the idea of changing the ship wasn't a deal breaker."

During the fourth season a new executive producer Manny Coto took control of the writing staff. He was very keen to tell stories that linked *ENTERPRISE* to the original series and that showed how the Federation had come into being. Drexler often found himself taking drawings into Coto for approval and the two men would discuss their shared love of *STAR TREK*.

TIME FOR WAR

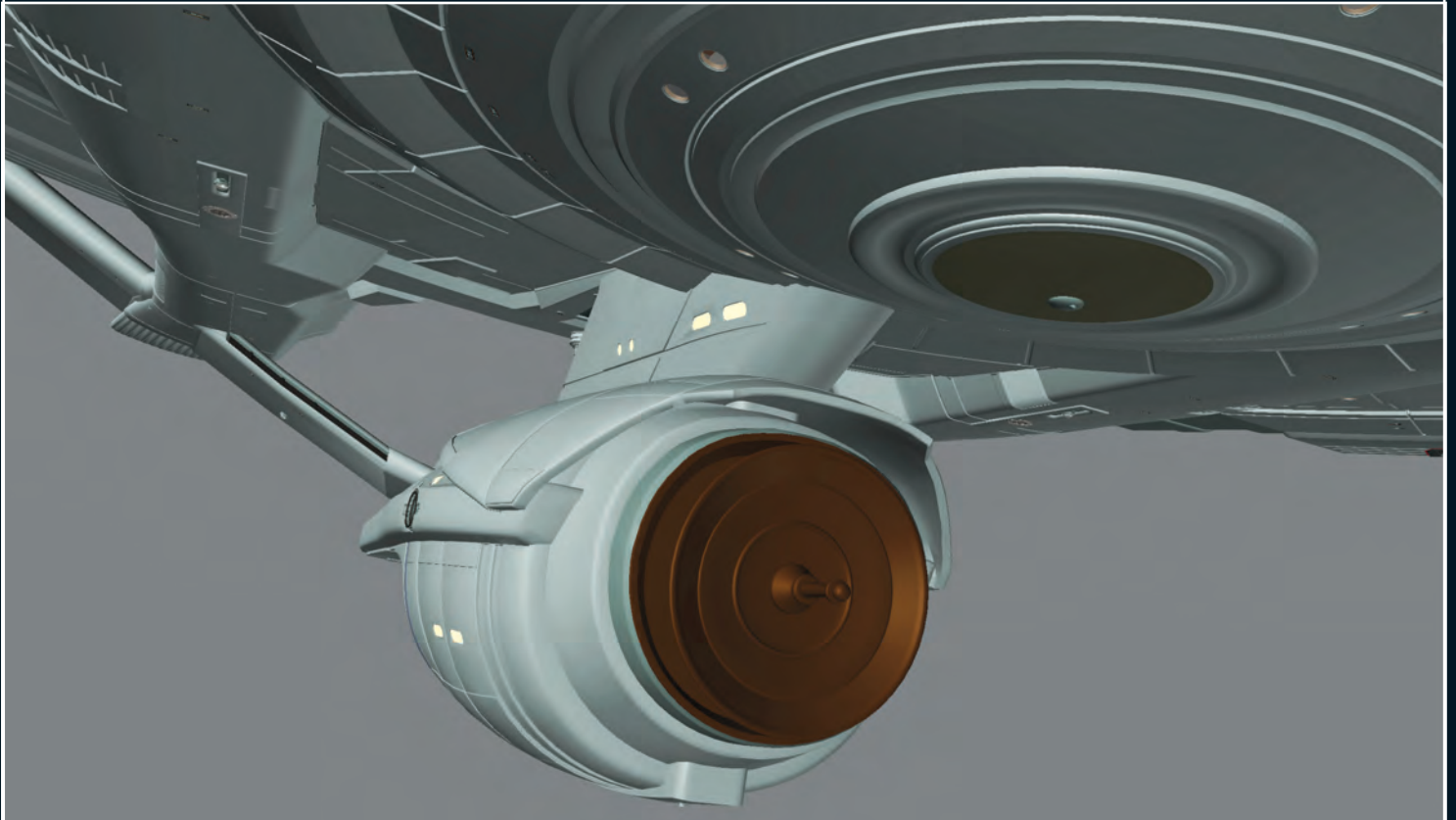
If there had been a fifth season, Coto planned to explore the Earth/Romulan wars, which had been referred to in the original series episode 'Balance of Terror'. Drexler pitched the idea to him that if the *Enterprise* was going to go to war, it was time for a serious upgrade. "There's almost no doubt," Drexler says, "that we would have gotten into the Earth/Romulan conflict. If you're going to do that, you've got to go back and take a second look at your ship. When the NX went out there it pretty much got its ass handed to it a few times. In my mind, the

refit was something that was on the boards at Starfleet almost before it launched. They knew that they were going to go out there and learn. It was underpowered and there's no doubt that it would be a good idea to upgrade the ship using everything that you had learned. In my world, they would bring the ship back and have that secondary hull ready to go. We talked about it and he thought it was a good idea."

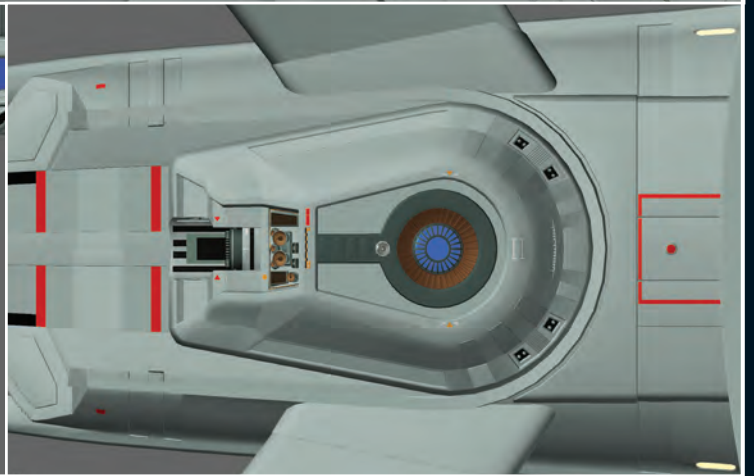
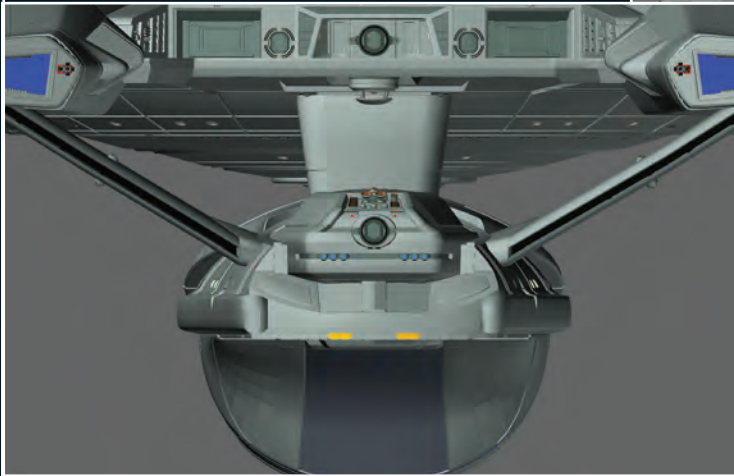
Of course, *ENTERPRISE* never got a fifth season, and the budgets were now so tight that even new CG shots were rationed, so Drexler was left with the tantalising possibility of what could have been. "Whether it would have happened or not, I don't know," he admits, "but I think it would have been a terrific idea."

Although the series came to an end, the *Enterprise* did not. Like many members of the VFX team, Drexler moved on to work on Ronald D. Moore's reimagined *Battlestar Galactica*. In his 'spare' time he also worked on a number of licensed *STAR TREK* projects including the 'Ships of the Line' calendar which featured new art using

THE DETAILS



Drexler produced these Open GL views for fan modellers who wanted to build their own physical versions of the NX-refit, something that had never been done for the show. Because in these renders all the textures and lighting were stripped away, the modellers could get a good look at all the details. Seen this way, you can clearly make out the positions of each individual window and the running lights, and see the details of the various airlocks, shuttlebay doors, sensor palettes and thrusters.





▲ After Pierre Drolet had built the *Enterprise* refit, Drexler produced a series of renders showing it from different angles, several of which echo shots that were used on the original series.

► Drolet's finished version of the refit, complete with original series deflector dish and partially enclosed nacelles, but still lacking some finishing details such as the ship's registry.



many of the CG models that had been created for the various *STAR TREK* shows.

"I wanted to do something that would really get people's attention for that year's calendar and it struck me that this was the perfect opportunity to do the refit. Pierre was working with us on *Galactica*. I said, 'Hey we could do this now. Would you build it?' We usually get a fee for doing a page but I didn't take a penny for doing that page, it all went to Pierre, and he built the model for that fee."

REINVENTING THE ENTERPRISE

With Drolet on board, Drexler went back to his original design and started to think about exactly how it would evolve. "I didn't look at that original design that got rejected and say, 'Let's see what can we do?' This was a whole different ball game."

Instead what Drexler did was to render out plan views of the NX-01 and start sketching in how things would change, not just adding an engineering hull, but pushing the individual elements closer to Matt Jefferies' original designs. "The NX must evolve into the *Constitution*. It has to," Drexler says. "We know what the next step is. We can't do something wacky or off the wall with the NX. Its future is predetermined."

Drexler sketched in an engineering hull



underneath the existing ship, creating a short neck to connect it to the bottom of the saucer and extending the existing nacelle support struts so they connected to this new unit. The shape of the hull followed the basic shape of Matt Jefferies' design but the back was far thinner. "I wanted to suggest that the secondary hull still had some way to go," Drexler explains. "That was specifically so people can look at it and say 'Oh yeah I see where you're going with this.' If I had configured it so it was very much like the *Constitution* class then you can't develop it, you can't show an evolution."

STRUCTURAL CHANGES

He adds that unlike Kirk's ship, the NX-refit's engineering hull doesn't have a shuttlebay, and therefore lacks the familiar clamshell doors. Drexler decided that the NX's original shuttlebay would still be in place, though the new neck that connected the two hulls reduced the numbers of hatches.

"There were four doors originally on the bottom of the saucer. With the refit, two of them are closed up and two of them still work. The dorsal strut that comes down from the primary hull to the secondary hull only interferes with two of those doors."

However, the refit did gain a second shuttlebay. When the ship was originally designed, the two doors at the back of the saucer were originally

intended to be part of the ship's maintenance system. "That little porch on the back of the saucer was an engineering staging area. We never did this on the shows, although we suggested it to them. We had the idea that they had to stop the ship and work on it after so many hours of running the warp engines. There were arms like on the International Space Station that could come out of the ship and work on the engines from behind. They came out of that area behind the saucer. But once we had the secondary hull, we started using those doors back there for shuttlecraft, shuttlepods and small craft."

The new secondary hull replaced the tiny section at the back that sat between the nacelle support struts immediately behind the saucer, but instead of completely replacing it, Drexler incorporated into the top of his new engineering hull. "If you look at the Nautilus from *20,000 Leagues Under The Sea*, there's like a U-shaped piece at the very back where the rowboat came out. We have something similar on the NX. That's the asymmetrical warp field governor - Mike came up with that at the time of the design of the ship. The warp coils are asymmetrical, so it created an asymmetrical warp bubble. This little device back here actually helped bend the bubble to be more symmetrical, so it's a warp field governor. We kept that for the refit."



▲ Once he had a finished model of the ship, Drexler experimented with different images before he settled on the final composition that was used in the calendar. This is one of the images he rejected.

Drexler also decided that the NX would retain its original engineering room, with the original engine serving as a backup to the new warp core. “The refit is nowhere near as powerful and as complex as the *Constitution* class but we do have a much more powerful and upgraded warp core in there. The secondary hull is set up pretty much like what

we were used to, with the warp core coming down and then running back to the engines, but the engineering department in the saucer is still intact. That warp engine is kept on hot standby all the time. The two warp cores can work in concert, but during normal operation, you’re just running off the warp core in the secondary hull.”



NX-01



S.S. Enterprise

NX-01
S.S. ENTERPRISE

► *STAR TREK* scenic artist Mike Okuda created the pennants and ship’s registry. The cursive typeface used for *S.S. Enterprise* was a conscious echo of the type on the *Gallileo* shuttlecraft.



In order to brief Drolet, Drexler created a more detailed set of blueprints that he marked up with various notes. Specifically, he asked Drolet to give the engineering hull on the refit exactly the same deflector dish as Kirk's ship. "The deflector dish is directly from the *Constitution* class. Even the one on the front of the saucer and the secondary hull is directly from the *Constitution* class - it's just squeezed on the y axis, that's all it is. Why is there still a deflector on the saucer? You might think you don't really need that any more, but actually you do. If you ever had to jettison the engineering hull on the refit, the ship is still warp capable, unlike the other *Enterprises*."

ECHOING THE 1701

As part of the plan to make the refit more like the *Constitution* class, Drexler also asked Drolet to close in the outside of the warp nacelles. "Rick Berman liked the idea of having the photon spill on the outside like the *Enterprise-D* but to me there was no question that we were going to close that up."

Drexler was also clear that the refit should look a little more sophisticated and advanced than the

original version and that in order to achieve this, it should look more – not less – like Kirk's ship. "I get a lot of people telling me that the NX looks more futuristic than the *Constitution*. I absolutely disagree one hundred percent. I don't think so. I think the NX and the refit are more primitive.

"There's all kinds of panels and plates and nurries and stuff on the NX. If you look at the *Constitution* it's very clean. Look at what Apple did with the iPad – there's like one button on it! The more advanced something is, the less detailed it becomes. To me that's futuristic. The *Constitution* class is sleek and smooth like a dolphin. Everything on the refit is closer to the *Constitution*. If you look at the secondary hull, there's almost none of the plating or aztecing that's on the primary hull."

Once Drolet had completed the basic modelling they added some extra pennants, which like the rest of the ship were designed by one of the NX's original creators. "The markings on the ship were designed by Mike Okuda so they're thoroughbred. I asked him if he would do it and he said he'd love to. You'll notice we used a script, a cursive on the name of the ship, not quite like what was on the *Galileo* shuttlecraft but we knew that

▲ Jen DeSalle continued to work on the model after it made its first appearance in the calendar. This is one of the first images she produced.

was something that Matt Jefferies would like so we were sure to do that.”

The NX-refit made its debut in the 2011 ‘Ships of the Line’ calendar, appropriately in an image that showed it in drydock. But the story didn’t end there. The *STAR TREK* novels based on *ENTERPRISE* started to tell the story of the Romulan War, and a group of online fans started to generate images of what they imagined would have been in a fifth season of *ENTERPRISE*. As a result the NX refit continued to evolve and Drexler worked with modeler Jen DeSalle to provide covers for the books and artwork for the online group.

CONSTANT CHANGE

As Drexler explains, they continued to make subtle modifications to the refit *Enterprise*. “When we did the NX we couldn’t get answers to some thing, like where were there phasers and where were they? If you look at the NX there are hatches all over the place and the idea is that the phase cannons could come out and go back in. That was me covering my ass because I didn’t have to get approval of where they were placed, or what they looked like, until we needed them. Once the Romulan War had broken out full strength one thing that I did with Jen DeSalle was put phaser emplacements that were permanently out there that were mounted on the hull.”

They also added more details to the model, fleshing out areas that had never actually been seen, such as the open cargo ‘corridors’ that run through the saucer section.

For Drexler the design of the NX-refit has been about his original ship coming of age and, as he always meant it to, evolving into something closer to Matt Jefferies’ beloved design. “When it gets its secondary hull it gets its wings,” Drexler says. “It becomes a full-fledged starship. I just love that narrative. Once I did the refit version, a lot of people who hadn’t like the NX, all of a sudden liked it because they went ‘Oh I get it now. I can see the evolution and that’s really cool.’ That’s the beauty of it.”

► The refit was always intended to make the *Enterprise* a worthy adversary during the Earth-Romulan wars. This vital period of *STAR TREK*’s history remains a mystery, but this image, created by Drexler, hints at what we might have seen in a fifth season of *ENTERPRISE*.





NX-01

STAR TREK™

