

2

STAR TREK™

THE OFFICIAL STARSHIPS COLLECTION



U.S.S. ENTERPRISE™
NCC-1701 (2271)

CONSTITUTION CLASS

RELAUNCHED: 2271

LENGTH: 305 METERS

NUMBER OF DECKS: 21

U.S.S. ENTERPRISE NCC-1701 Refit

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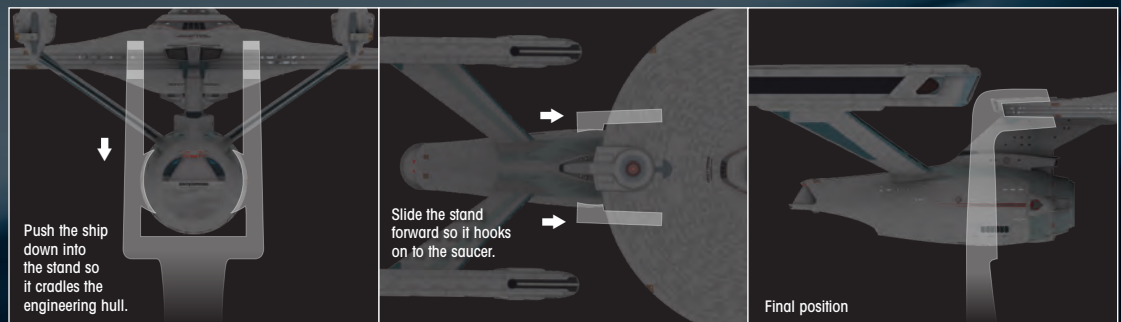
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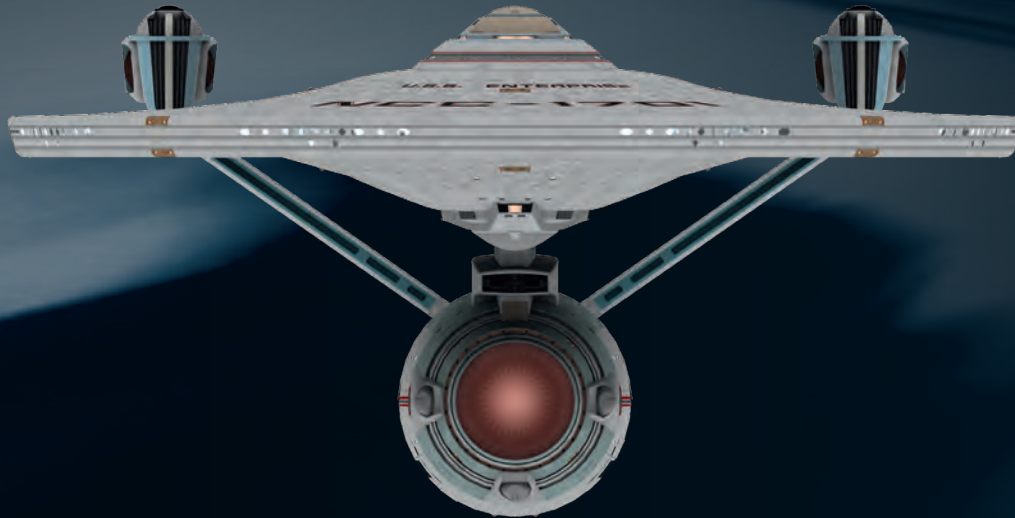
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U.S.S. ENTERPRISE NCC-1701 Refit

SPECIFICATION



REGISTRY:	NCC-1701
CLASS:	CONSTITUTION CLASS
CONSTRUCTED:	SAN FRANCISCO FLEET YARDS
LAUNCHED:	2271
DESTROYED:	2285
LENGTH:	305 METERS
DECKS:	21
CREW:	450
TOP SPEED:	WARP 8
WEAPONRY:	9 DUAL PHASER ARRAYS 3 PHOTON TORPEDO LAUNCHERS
CAPTAINS:	Willard Decker, James T. Kirk, Spock





In 2269, following the completion of Captain Kirk's momentous first five-year mission, the *U.S.S. Enterprise* NCC-1701 returned to San Francisco Yards, a Starfleet drydock in Earth's orbit, for a major overhaul.

The *Enterprise* had undergone minor refurbishments in the past, but the punishing nature of the mission had taken its toll on the ship and a major refit was required. It had been subject to numerous hull-pounding battles and frame-stressing manoeuvres and was in need of an almost complete rebuild. Nearly every system was replaced or upgraded and the interior was remodelled and refurbished. The reconstruction was so extensive that the *Enterprise* practically

became a brand-new ship, although it retained the same registry number – NCC-1701.

The overhaul took approximately 18 months and was overseen by Captain Willard Decker, who had taken over command of the ship after Kirk's promotion to admiral. He was given valuable technical assistance by Chief Engineer Commander Montgomery Scott, a man who knew the ship's systems better than anyone.

INCREASED LENGTH

At first glance, the refit *Enterprise* appeared much as it had before, with a saucer section connected to an engineering hull underneath and two warp nacelles at the back. A closer examination

U.S.S. ENTERPRISE NCC-1701 REFIT

An 18-month-long refit resulted in the *U.S.S. Enterprise* NCC-1701 looking and performing better than ever



DATA FEED

The colour of the light given off by the deflector dish changed depending on how fast the refit *Enterprise* was travelling. At warp speeds it had an intense blue glow, while at impulse speeds it had a golden glow.

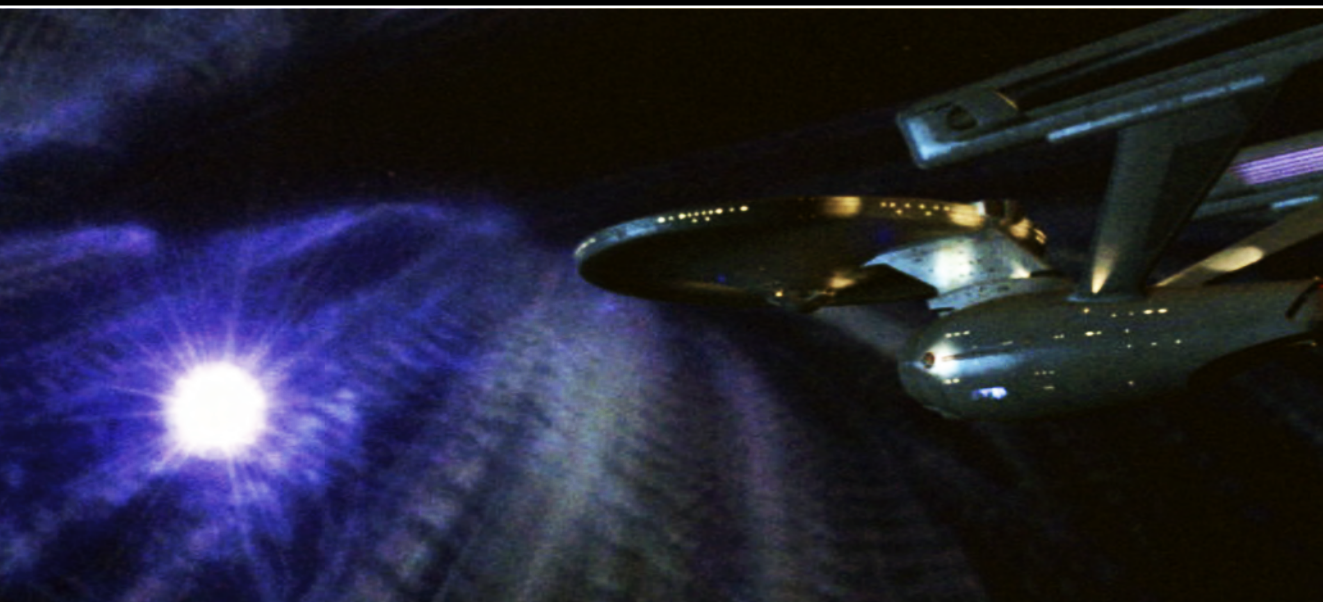
▲ The U.S.S. ENTERPRISE NCC-1701 underwent a major refit between 2270 and 2271 that left it looking like a brand-new ship.

revealed many subtle changes that resulted in a sleeker, more elegant look and it was now 14m longer at a total length of 305m.

While the external changes to the *Enterprise* were more of an evolution than a revolution, the internal changes were more radical. The very heart of the ship was replaced with a new vertical warp core superseding the old horizontal configuration. Energy from the warp engines was now routed

directly to the ship's nine dual-phaser banks resulting in these weapons being more powerful, although this did mean that if warp power was knocked out, the phasers went off-line too.

The most obvious changes to the casual observer were the renovation of the interior spaces. They were completely redecorated and refurbished in a new colour scheme and all the console workstations were upgraded. The medical facilities,



◀ ▶ Much as it had done before the refit, the ENTERPRISE continued to face grave threats. In 2271, it was despatched to deal with V'GER, an immense machine life form of unbelievable destructive power. In 2285, with a crew made up largely of Starfleet cadets, it answered a distress call and became embroiled in a deadly confrontation with Khan Noonien Singh who had seized control of the U.S.S. RELIANT NCC-1864.



▲ The ENTERPRISE survived numerous seemingly impossible situations during its service, but it finally met its end in 2285, some 14 years after its major refit and just before its scheduled retirement. Returning to the Genesis planet to retrieve Spock's body, the ship suffered major damage in a surprise Klingon attack. Kirk was forced to implement the autodestruct to stop it falling into enemy hands.

main transporter room, shuttlebay and main bridge were all totally redesigned.

A huge recreation area was also added to the saucer section. It was equipped with many games and also featured a giant viewscreen suitable for addressing most of the ship's assembled crew.

OPERATIONAL HISTORY

The refit *Enterprise* was rushed into service in 2271 to deal with the V'Ger crisis. The refurbishment and upgrades had not been fully completed and many of the systems, including the transporters and warp engines, were not operational. There had been no time for the normal shakedown tests, but as the *Enterprise* was the only starship in intercept range, it had to be launched ahead of schedule. With Kirk back in command, the mission was successful

and the threat from V'Ger was averted, although Captain Willard Decker was lost in action.

Following this, the refit *Enterprise* undertook another five-year mission with Kirk again in command. When this was completed in 2277, the refit *Enterprise* became a training vessel assigned to Starfleet Academy under the command of the newly promoted Captain Spock.

In 2285, the refit *Enterprise* found itself pressed into action once more after Khan Noonien Singh stole the Genesis Device, an incredibly powerful technology that could create and destroy entire worlds. In the ensuing confrontation, the *Enterprise* sustained heavy damage, but ultimately triumphed, although it cost Spock's life.

Upon return to Earth, Starfleet Command informed Kirk that the *Enterprise* was to be



◀ One of the new facilities aboard the refit ENTERPRISE was a recreation area. It featured a large viewscreen and could accommodate most of the assembled crew.

▶ The bridge on the refit ENTERPRISE was a totally new module. It featured a similar layout as before but, among the changes, Spock's science station was moved towards the rear of the circular room.



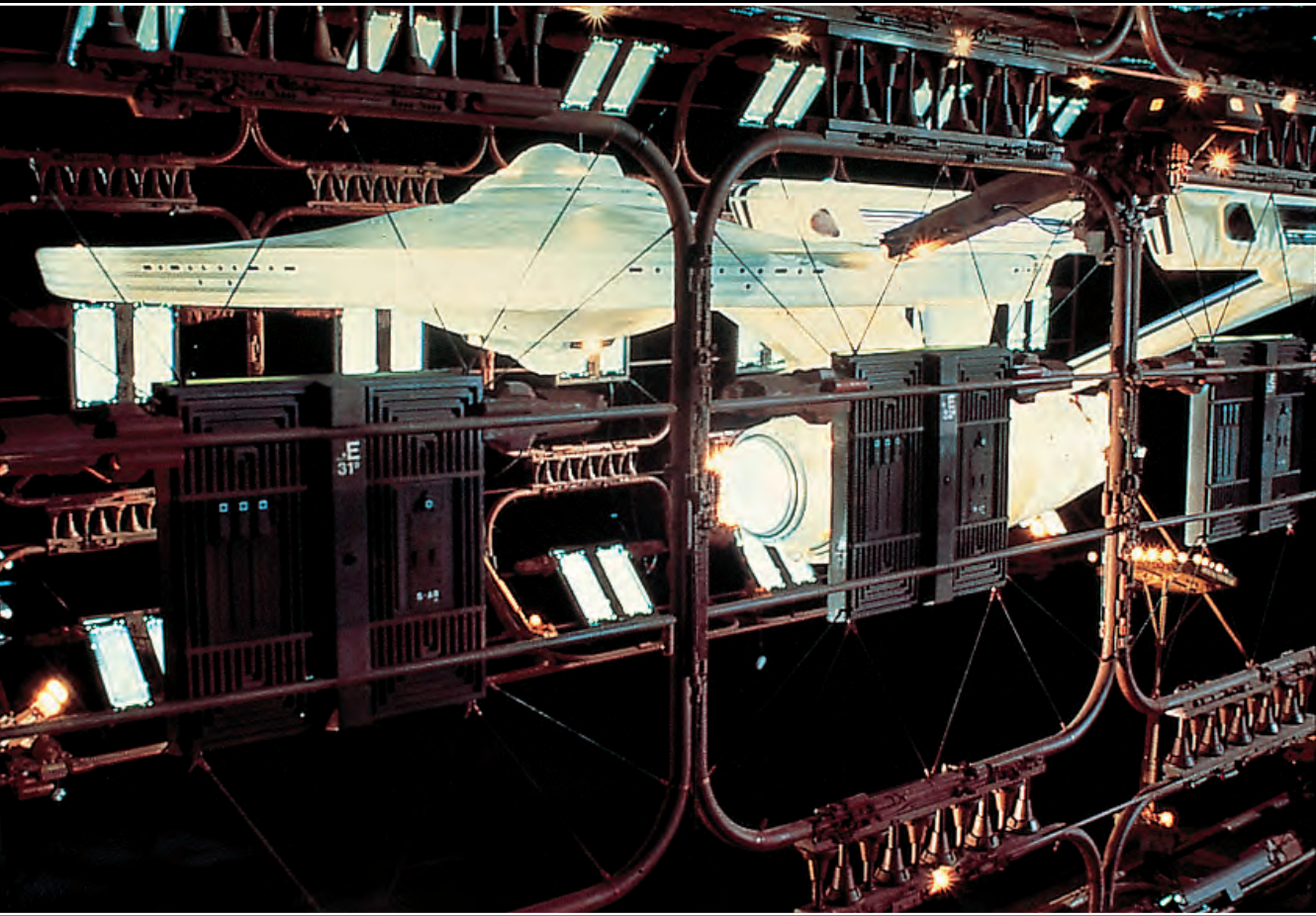
decommissioned. However, before this could happen, Kirk and a skeleton crew of his most loyal colleagues stole the *Enterprise* in order to return to the Genesis planet and retrieve Spock's body. This proved to be the *Enterprise*'s last journey as Kirk was forced to activate its autodestruct to stop it falling into Klingon hands.

Kirk had made the ultimate sacrifice, but it proved to be worth it as the crew discovered a regenerated Spock, who had been miraculously restored to life by the Genesis process. In many ways it was a fitting final mission for the *Enterprise* NCC-1701. The refit may have changed its appearance but in essence it was still the same ship. Far better for it to go out in a blaze of glory, helping to save the life of Kirk's old friend, than be scrapped because it was too old for service.



DATA FEED

Following Kirk's promotion to admiral and his posting as Chief of Starfleet Operations, his hand-picked successor, Willard Decker, took over as captain of the *Enterprise*. He was in charge of the ship throughout its refit and work was nearing completion when the *V'Ger* crisis arose. Given the enormity of the threat, Kirk took command of the *Enterprise* and Decker was temporarily demoted to commander and posted as executive officer.



◀ Enormous expense and care was taken with the sequence of the ENTERPRISE inside drydock. The sequence was filmed using traditional motion control techniques that involved filming the model dozens of times, with each pass adding new features.

▶ The scenes of the redesigned ENTERPRISE in drydock provided audiences with several firsts: this was the first time anyone had seen a spacedock and the first time that STAR TREK had visited Earth.

Drydock

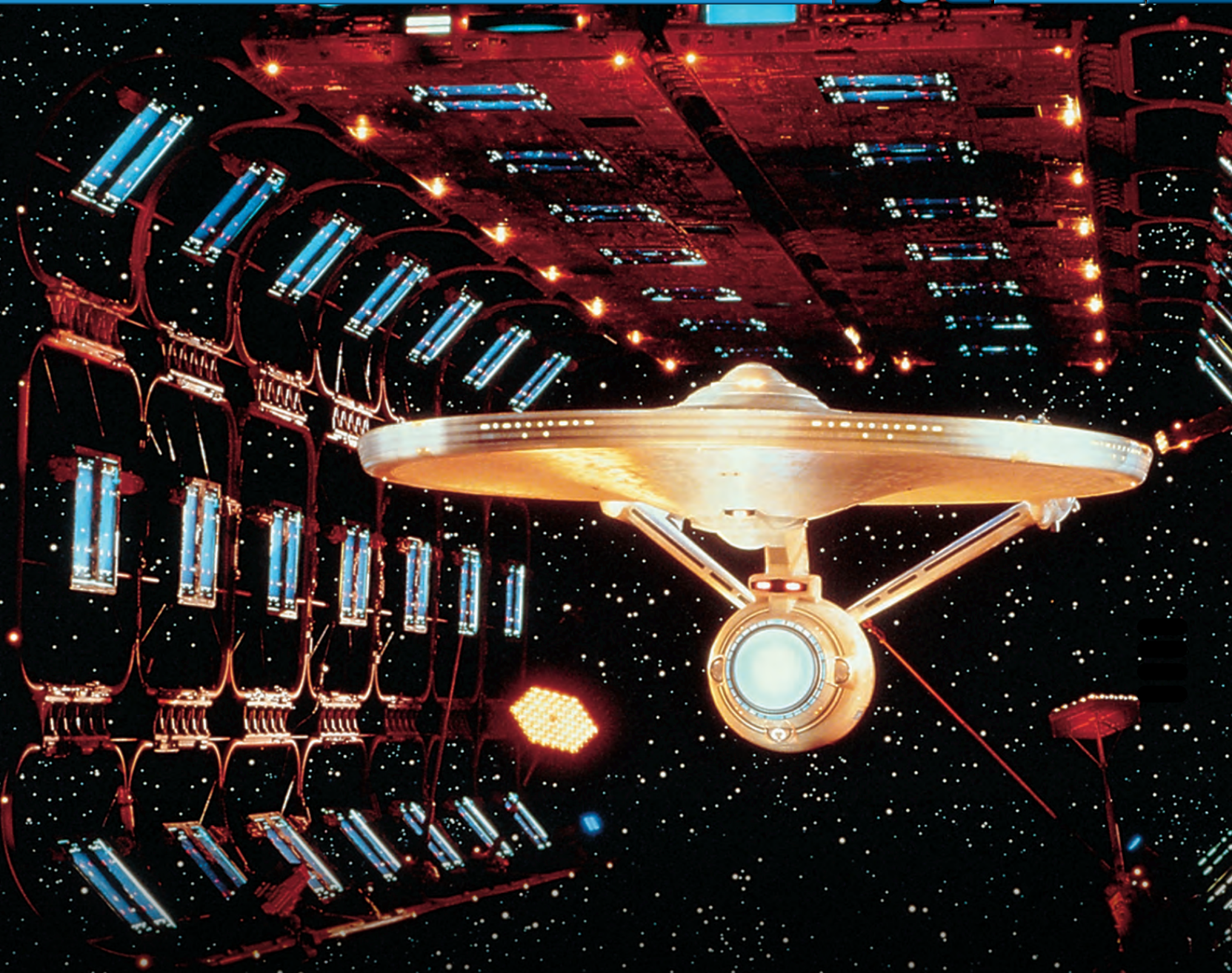
The epic sequence featuring the refit *U.S.S. Enterprise* NCC-1701 in drydock is one of the highlights of *STAR TREK: THE MOTION PICTURE* and one of the most memorable scenes in any *STAR TREK* movie. Fans had been waiting an agonising 10 years to see the show they loved back on the screen and anticipation at seeing the *Enterprise* again had reached fever pitch.

The long wait proved worthwhile as the refit *Enterprise* was showcased in an adoring fly-by sequence that allowed viewers to linger over every magnificent detail of the ship. This extended scene was said to have been the longest continuous special effect in film history to that point and it was an awe-inspiring sight for audiences in 1979. The quality of the visual and special effects was truly ground-breaking and light years ahead of what had been possible 10 years earlier

during the making of the original *STAR TREK* TV series.

The scenes of Kirk and Scotty approaching the *Enterprise* in drydock and flying around it in a travel pod spanned two pages in the script, but took roughly 45 days to film. The tone of the sequence is grand and epic, especially when accompanied by Jerry Goldsmith's beautiful, haunting score. "They gave her back to me," says Admiral Kirk to Scotty in hushed tones that send goose bumps up the spine as they approach the drydock.

When the *Enterprise* glides into view, Kirk's face fills with emotion, reflecting his sense of awe and excitement at being reunited with his obsession. The travel pod then circles slowly round the ship allowing the audience to marvel at all the details that had been added to the newly refitted *Enterprise*. Neither the ship or *STAR TREK* had ever looked so good.



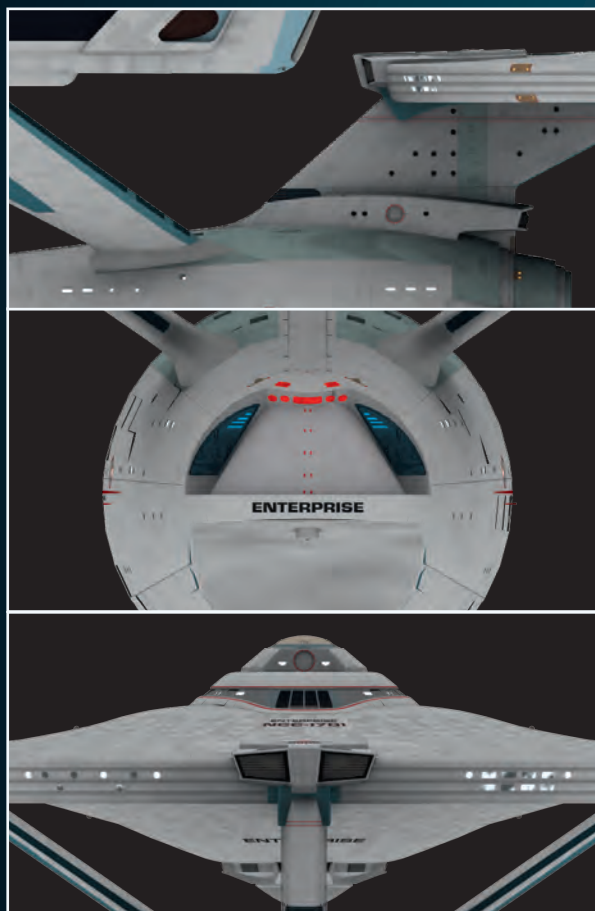
▲ An eight-foot-long model of the refit ENTERPRISE was built for the movie. It took 14 months to complete and cost \$150,000, while the drydock model cost \$200,000.

DATA FEED

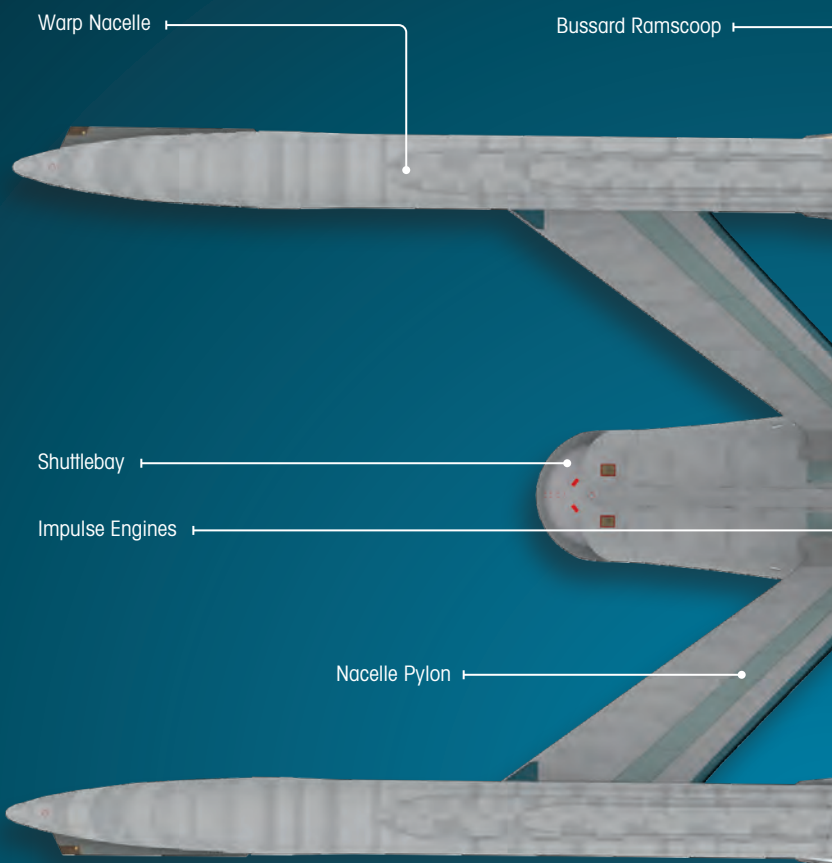
At the time of its release in 1979, *STAR TREK: THE MOTION PICTURE* was said to have been the most expensive movie ever made, costing \$45m. The effects budget alone was around \$10m and it showed in sequences like this one.

EXTERIOR CHANGES

The refit of the *Enterprise* resulted in many changes, although the overall shape remained very similar. One of the most noticeable changes was that the pylons supporting the warp nacelles were now located further towards the neck of the ship and rose from the engineering hull at a swept back angle rather than straight up as they had been before. The nacelles themselves were no longer cylindrical, but more angular and the glow from the warp energy field could be seen through the panels that ran along the sides.



The dorsal pylon connecting the Saucer Section to the Engineering Hull now housed a rectangular twin photon torpedo/probe launcher at the front where as before it had been located on the underside of the Saucer Section. Also, the whole surface shape of the Engineering Hull became rounder, while the shuttlebay and shuttlebay doors were made much larger.



Warp Nacelle

Bussard Ramscoop

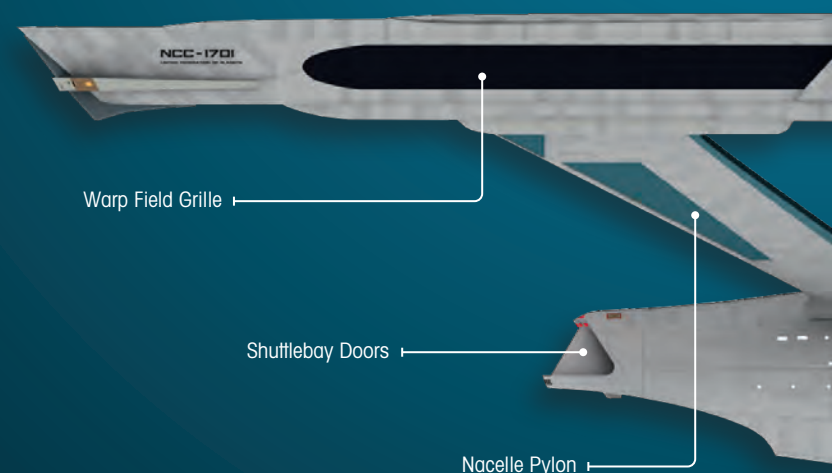
Shuttlebay

Impulse Engines

Nacelle Pylon

DATA FEED

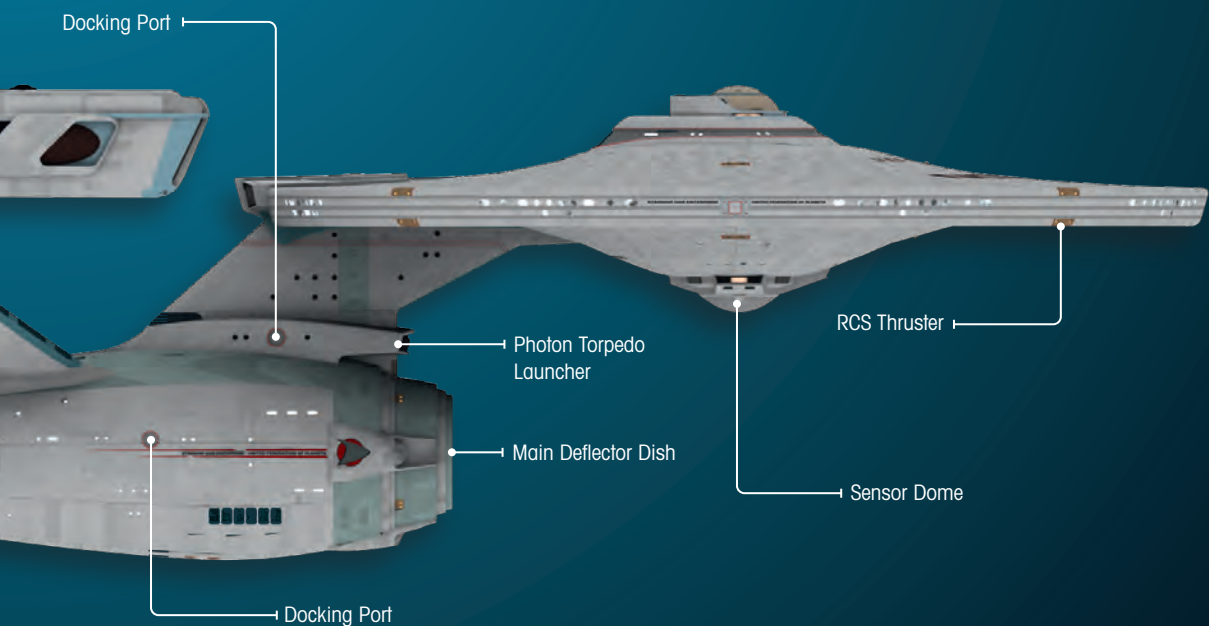
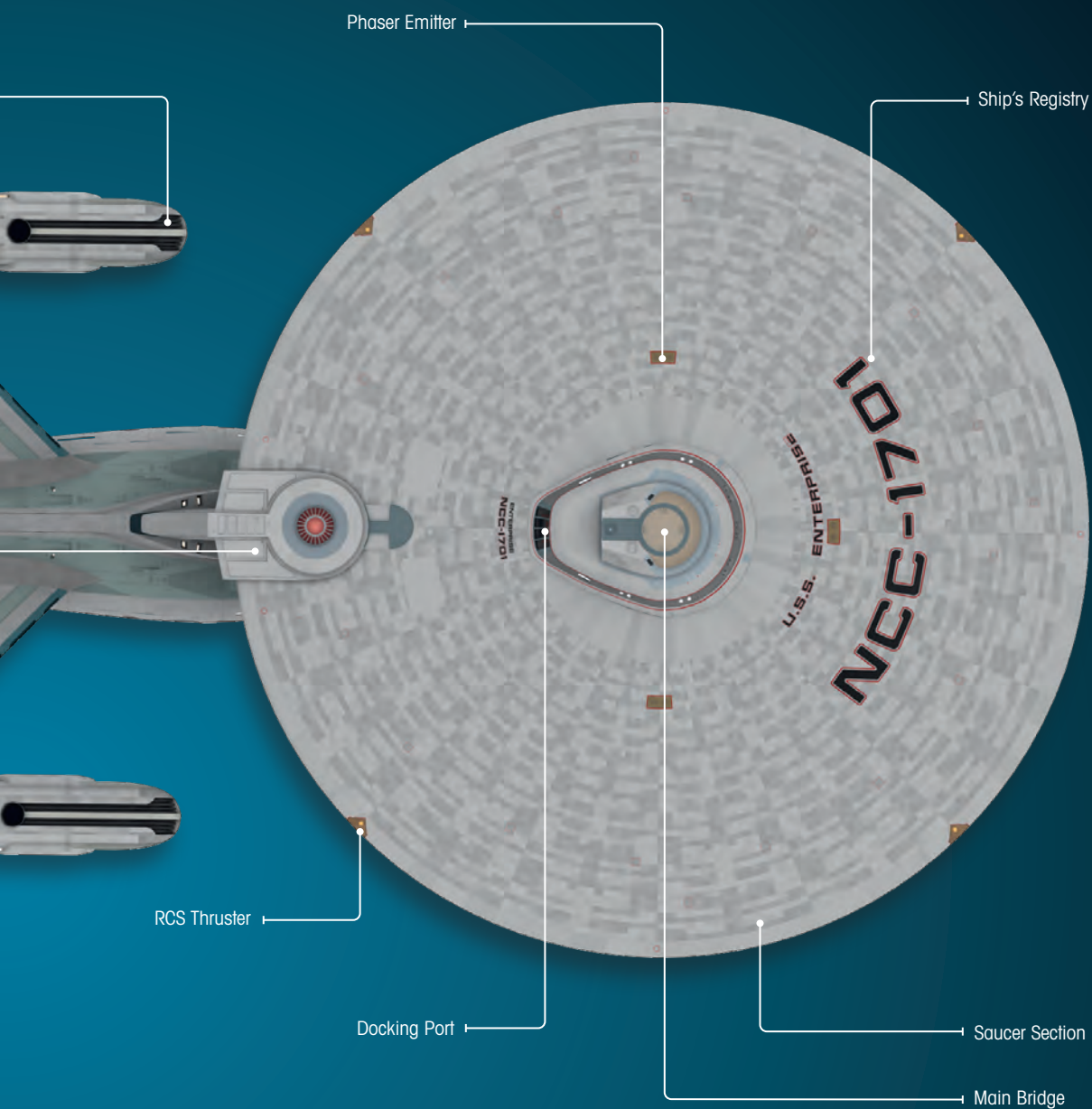
The refit *Enterprise* remained a *Constitution*-class ship and very closely resembled its successor the *U.S.S. Enterprise* NCC-1701-A.



Warp Field Grille

Shuttlebay Doors

Nacelle Pylon



SURFACE DETAIL

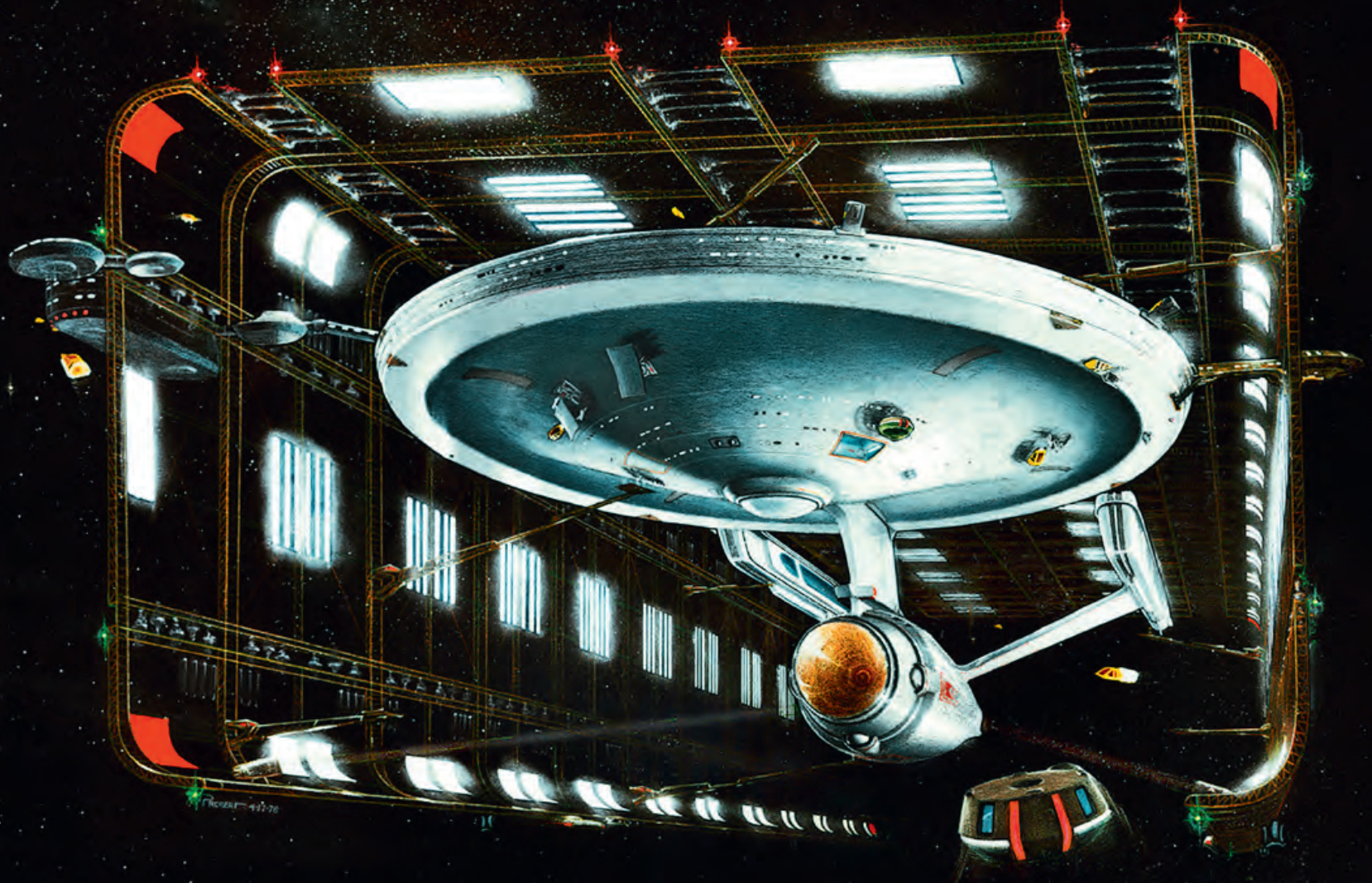
The hull plating and deflector grid became much more pronounced on the refit *Enterprise*. This gave the exterior a noticeable pattern and many more windows were added too.

IMPULSE ENGINES

The impulse engines that were used for propelling the ship at sub-light speeds were housed inside a distinct module on the saucer section. This was located on top of the saucer at the rear.

UMBILICALS

Many more airlocks and docking ports were added to the ENTERPRISE during the refit. They were located all over the surface, but in particular on the neck pylon that connected the Saucer Section to the Engineering Hull. More service hatches were also added to allow the transfer of consumables, such as deuterium, to the ship.



DESIGNING THE



Enterprise Refit

The *Starship Enterprise* was carefully updated, upgraded and thoroughly rethought for her debut on the big screen

Back in 1964, when the *U.S.S. Enterprise* NCC-1701 was first designed, little could its creator have known that it would go on to become the most famous and iconic starship in science fiction history.

The man who came up with the original design was Matt Jefferies, and more than ten years after the series ended, he was also the man who began the process of redesigning the *Enterprise* that would eventually feature

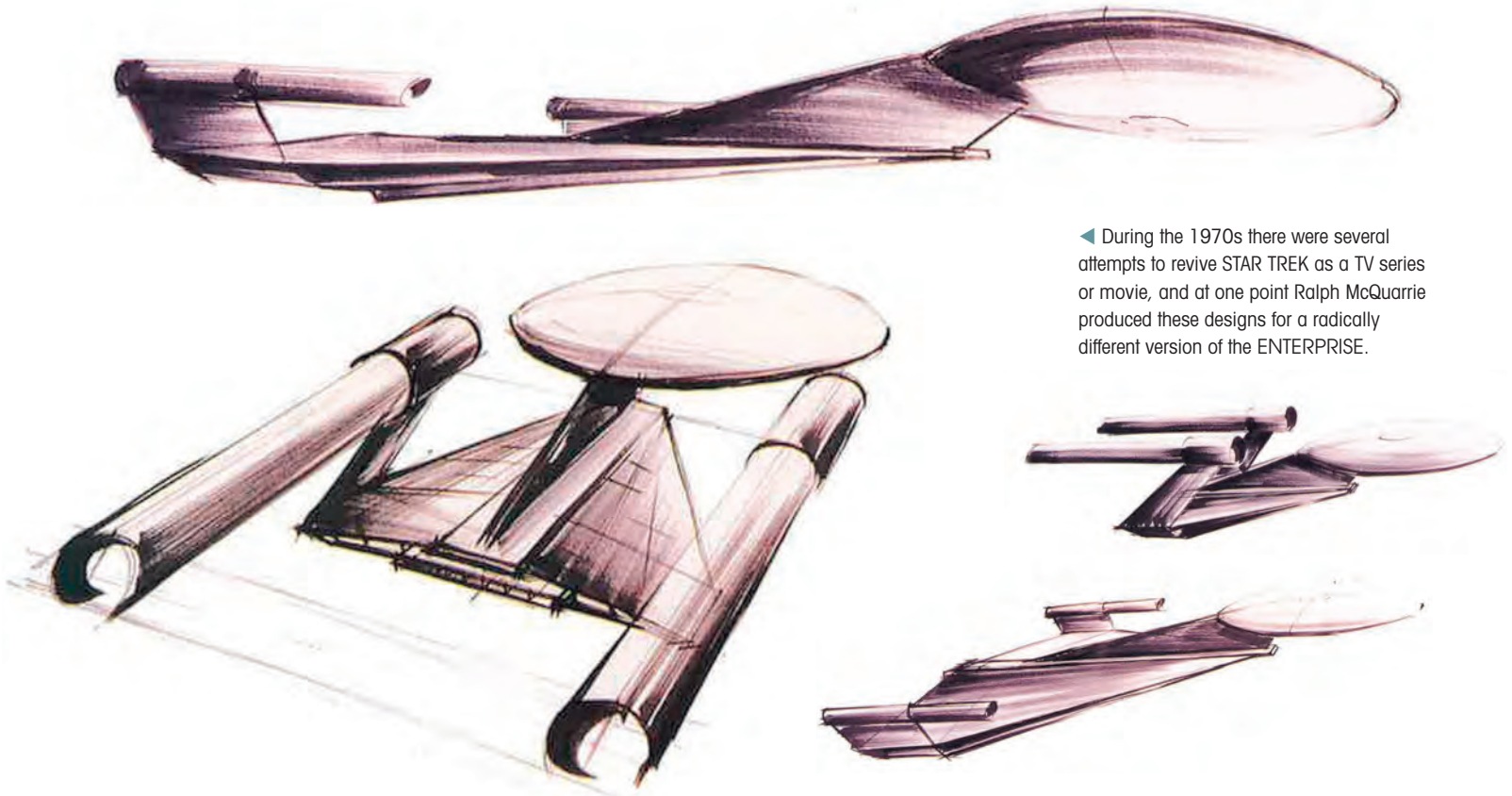
in *STAR TREK: THE MOTION PICTURE*.

Initially, *STAR TREK*'s creator Gene Roddenberry asked Jefferies to update his famous starship in 1977, not for a movie, but for a proposed spin-off TV series that was to be called *STAR TREK: PHASE II*. Always a logical thinker, Jefferies decided that the best way of doing this was to follow the basic design he had come up with before, but to upgrade certain elements, such as the engines, that would have benefited

from technological advancements.

Jefferies felt that the saucer section should remain much as it had been before and that it should be smooth and plain. All components, like sensors and deflector grids, he reasoned, would not be on the hull exterior, but inside the skin of the ship where the crew could easily access them if they needed repair. This meant that the changes he could make to the *Enterprise* would largely be confined to the nacelles and

◀ This concept illustration by Andy Probert showed how the refit ENTERPRISE would look in drydock.



◀ During the 1970s there were several attempts to revive STAR TREK as a TV series or movie, and at one point Ralph McQuarrie produced these designs for a radically different version of the ENTERPRISE.



▶ This illustration of the refit ENTERPRISE by Andy Probert envisioned how it might look illuminated in deep space. Adding the extra windows helped give it the extra detail that would be needed to bring it to life on the big screen.

the engineering section. He gave the secondary hull a taper and then changed the shape of the nacelles from cylindrical tubes to flat-sided modules and tapered their supports.

NEW DIRECTION

Art director Joe Jennings and conceptual illustrator Mike Minor then added more detail to Jefferies' redesign after he took another job. Then the proposed TV series was dropped in favor of a major *STAR TREK* film. At first, the art director on this movie, Richard Taylor, wanted to begin the design process on the *Enterprise* all over again

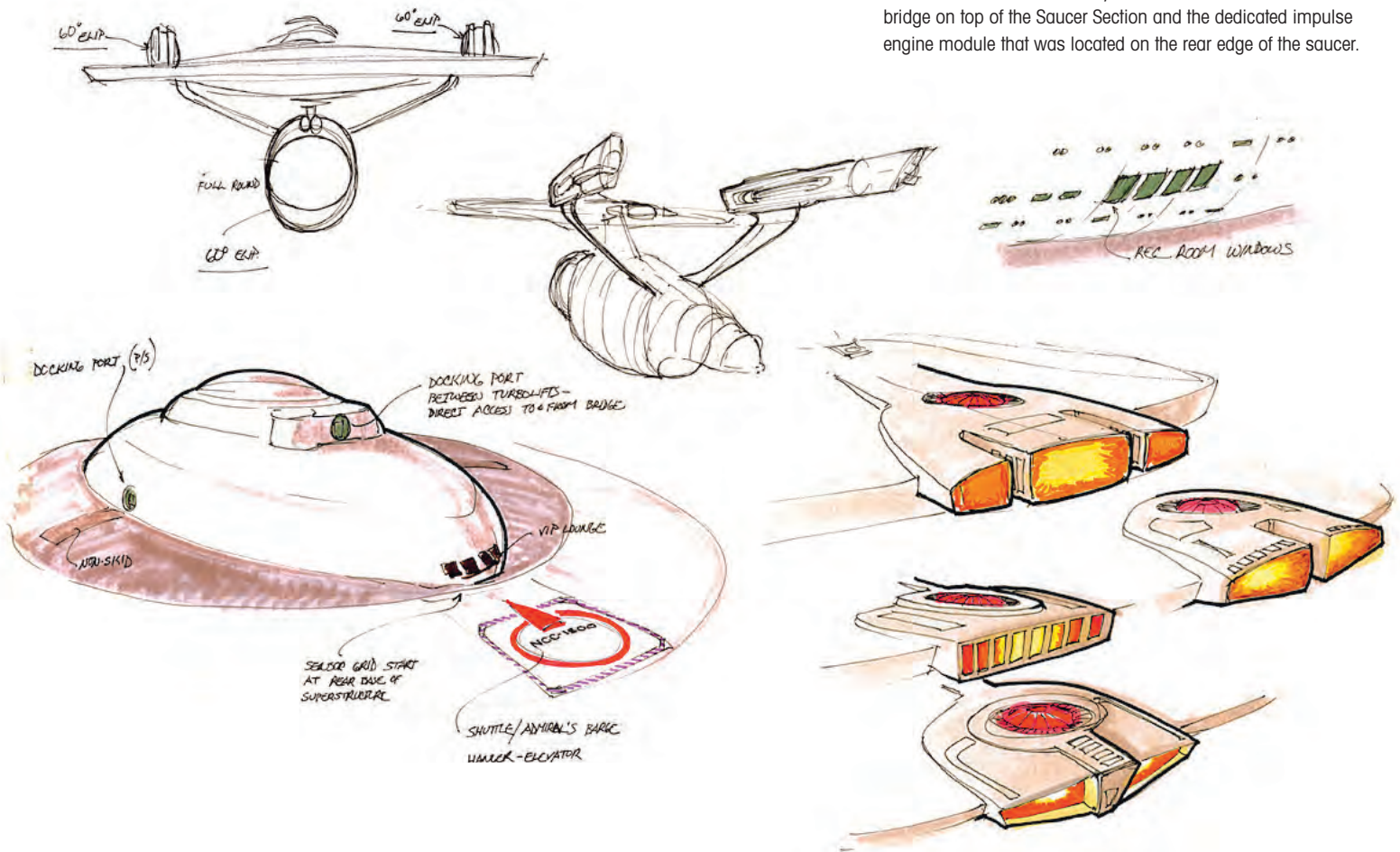


as this starship would have to look good, not just on a small TV screen, but on huge cinema screens. Roddenberry convinced him that this was not necessary and they should continue the work Jefferies had begun.

Taylor hired conceptual artist Andy Probert (who would later go on to design the *Enterprise-D*) to take the lead with the evolution of the redesign and to add the level of detail that would be

necessary for cinema screens.

"Richard (Taylor) felt we should stay with the proportions that we had inherited from Matt Jefferies and Joe Jennings," said Probert. "So with that as our starting basis, I lengthened the ship to a thousand feet, just a few feet longer than it was, and enlarged the saucer, eventually adding an updated superstructure to the top and bottom of it. I came up with new photon torpedo



▼ These sketches show Andy Probert's ideas for the main bridge on top of the Saucer Section and the dedicated impulse engine module that was located on the rear edge of the saucer.

tubes and redesigned the whole navigational deflector dish area. I updated the impulse engine, and added phaser banks around the ship, making them visible for the first time, along with a reaction control thruster system - that was there for the first time too. I designed it in a way that the ship could operate as two independent entities - the primary and secondary hulls - or as a combined starship unit." Probert also gave the saucer section something that had been hinted at in the series: landing gear.

COLLABORATIVE INPUT

Probert wasn't the only person working on the redesign of the *Enterprise*. Production designer, Harold Michelson, who worked extensively on the look of the ship's interiors also contributed to the exterior as did special effects pioneer Douglas Trumbull.

It was Probert and art director Richard Taylor, though, who had the greatest input and influence on the exterior detail of the *Enterprise*. "My approach was to give it a stylization that was almost art deco," said Taylor. "Things became more elongated and more elegant than the TV series version. I tried to give it a very art deco feel; for example, I added the parallel lines along the edge of the saucer. I spent weeks drawing and redrawing the nacelles. The front end of them is almost a 1940 Ford grille."

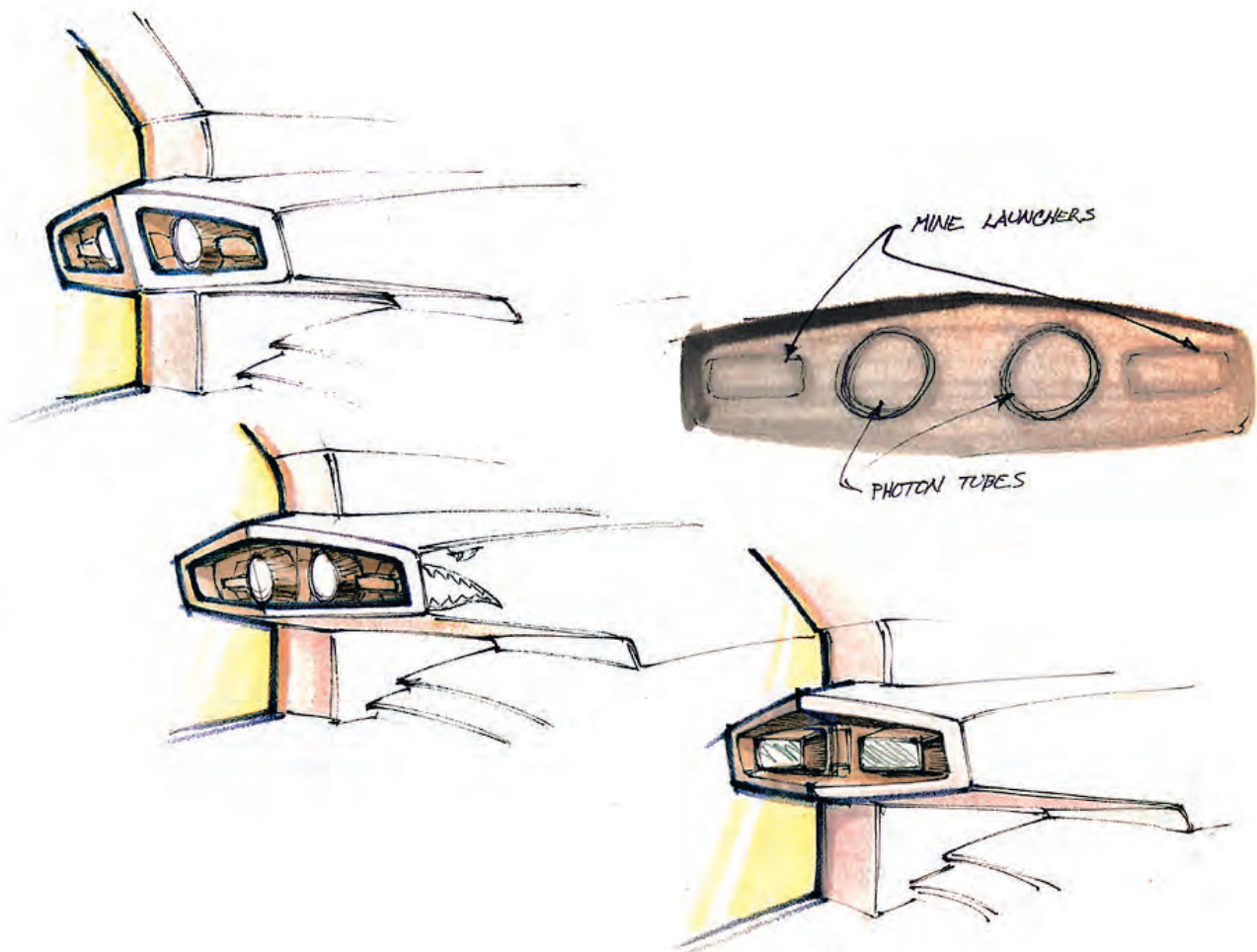
INSIDE JOKE

As well as these art deco design elements, Taylor and Probert added further surface details, such as the large transparent botanical windows in the lower half of the engineering hull. In fact, many more windows were added all over the exterior hull, and knowing

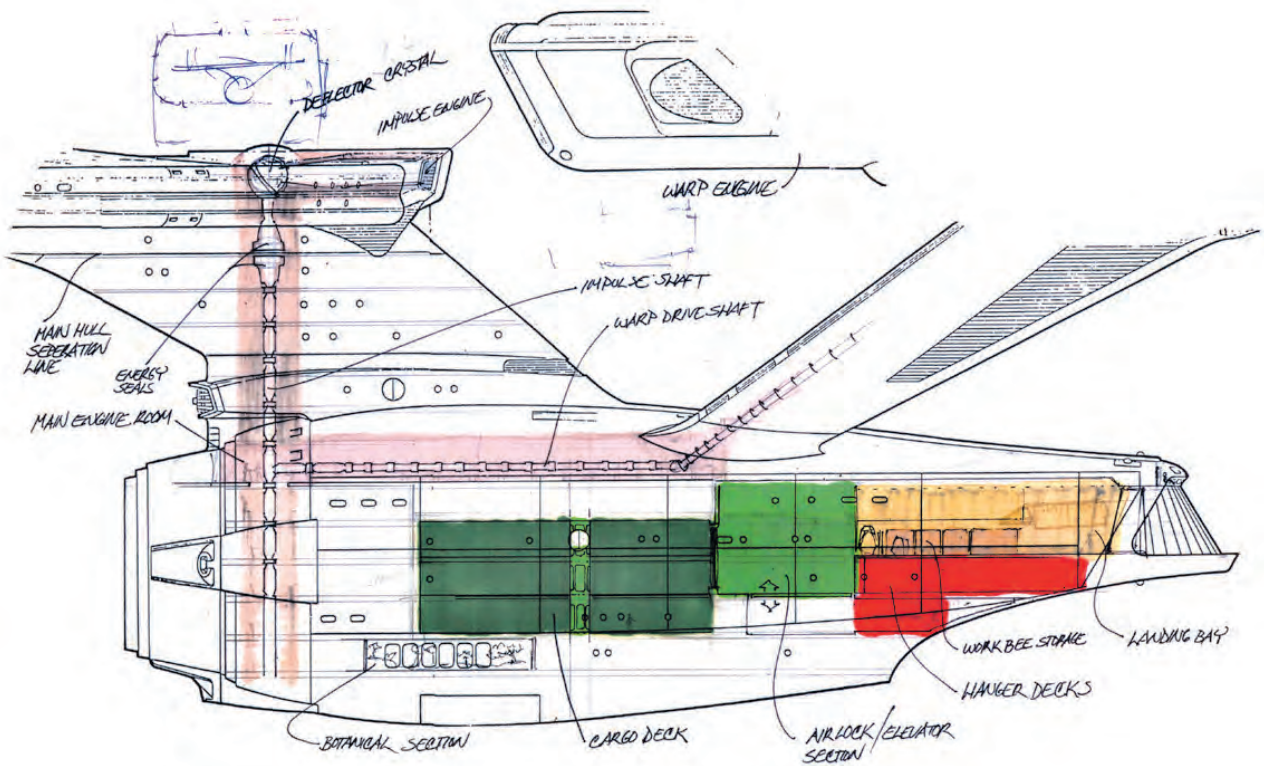
that these small details would be seen clearly on the big cinema screen, Taylor and his colleagues took the opportunity to have a little fun.

"We used small transparent images of the sets inside the windows," said Taylor. "When the camera got close to the model it appeared that you could see something in the windows. By the way, in some of the windows you can see photos of Mickey Mouse, Andy Probert, and others as a kind of in-joke."

For Probert's part he made sure the design was thoroughly thought out and resolved several questions that had plagued fans of the original TV series. The redesign of the *Enterprise* was a huge responsibility. It involved the input of half a dozen designers over a period of more than year. What they achieved has rarely been equalled and for many their design is the definitive *Enterprise*.



◀ In the original TV series it had never been clear where the photon torpedoes emerged from so Probert came up with these designs for the photon launcher on the neck between the two main sections.



◀ This cross-section of the refit ENTERPRISE shows how Andy Probert thought the interior might be laid out. In particular, it shows how the vertical warp core runs through multiple decks and how the landing bay and hanger deck link together.



FILMING THE



NCC-1701 Refit

III Filming the refit *Enterprise* for the big screen required a \$150,000 model and years of hard work, but the results were worth it.

Among the challenges facing the makers of *STAR TREK: THE MOTION PICTURE*, perhaps the most difficult was bringing the newly redesigned *Enterprise* to life on the big screen. This was the first time that *STAR TREK* had been made with a big budget and the effects, particularly shots of the *Enterprise* in space, had to be several orders of magnitude better than they had been during the *THE ORIGINAL SERIES*.

First, a model of the refit *Enterprise* had to be made. It was built by Magicam over a period of 14 months and ended up being eight feet long, weighing 39kgs and costing an incredible \$150,000. To put this in perspective, the main *Enterprise* model that was built for the original TV series was made from plaster, sheet metal and an assortment of woods, weighed a hefty 125kgs and cost \$6,000. This original model was only ever seen in 17 poses, but the new *Enterprise* made for the film could be supported at five different points depending on the photographic angle needed. This meant it had full 360-degree shooting options.

Once the *Enterprise* had been completed, it was painted by airbrush artist Paul Olsen. He used a high-gloss pearlescent lacquer coating which gave the *Enterprise* a chameleon-like appearance in the movie, changing its colour appearance depending on the kind, and direction, of lighting.

The paint job looked magnificent, but it caused

problems when it was time to film it as it was so reflective that it caused light flare, making it difficult for the camera to pick out the edges of the ship when shot against a dark background.

The special effects for the film were so extensive that the work was split between Doug Trumbull's and John Dykstra's effects houses. Even so, many members of both teams had to work 14-hour days, seven days a week to complete the work in time. Part of the reason for this was that the filming of the model was so painstaking. For example, the sequence where Kirk and Scotty fly round the *Enterprise* in drydock required 45 different shots and each one took a whole day. Many of the shots were composited "in camera" meaning that if anything went wrong hours, even days, of work could be lost.

All the hard work paid off though as the visual effects of the refit *Enterprise* blew audiences away and the film was nominated for an Academy Award for best visual effects. As for the astonishing model of the *Enterprise*, it continued to be used for filming in all of the first six *STAR TREK* movies, although it did need some love and attention to keep it looking at its best. On 7 October 2006, this famous model was sold at auction for \$240,000 to Paul Allen, the co-founder of Microsoft, and today it is on display at his Science Fiction Museum and Hall of Fame in Seattle.



▲ Members of one the special effects crew carefully unbox the ENTERPRISE in their studio before setting it up for filming.



▲ ILM built new sections of the ENTERPRISE for *STAR TREK II: THE WRATH OF KHAN* that were used to show damage.

ON SCREEN



TRIVIA

The original TV version of the U.S.S. ENTERPRISE NCC-1701 also appeared in *STAR TREK: DEEP SPACE NINE*, but the refit version created for *THE MOTION PICTURE* only ever appeared in movies. The same model was used for the U.S.S. ENTERPRISE NCC-1701-A, the only change was the addition of a letter to the registry number.



Captain Willard Decker and Ilia, the refit ENTERPRISE's new Deltan navigation officer, served as inspiration for the later characters of Commander Will Riker and Counselor Deanna Troi in *STAR TREK: THE NEXT GENERATION*.



When Kirk and his crew are standing on the Genesis planet supposedly watching the flaming remains of the ENTERPRISE in the sky, the actors were actually watching a tennis ball mounted on a boom microphone. The scene had to be reshot several times because not all of them were watching it at the same time.

- FIRST APPEARANCE:** STAR TREK: THE MOTION PICTURE
- MOVIE APPEARANCES:** STAR TREK TMP, STAR TREK II, STAR TREK III
- FINAL APPEARANCE:** STAR TREK III: THE SEARCH FOR SPOCK
- DESIGNED BY:** Matt Jefferies, Andy Probert, Richard Taylor, Douglas Trumbull, Harold Michelson, Mike Minor and Joe Jennings

KEY APPEARANCES

STAR TREK II: THE WRATH OF KHAN

In 2285, the *Enterprise* is drawn into a deadly game of cat and mouse inside the Mutara Nebula by Khan Noonien Singh, who has taken control of the U.S.S. *Reliant* NCC-1864. In the subsequent battle, the *Enterprise* emerges victorious, but before Khan succumbs to his injuries, he detonates the Genesis Device. The *Enterprise* only just warps out of range of the resultant explosion in time, but it comes at a terrible cost: Spock's death.

STAR TREK III: THE SEARCH FOR SPOCK

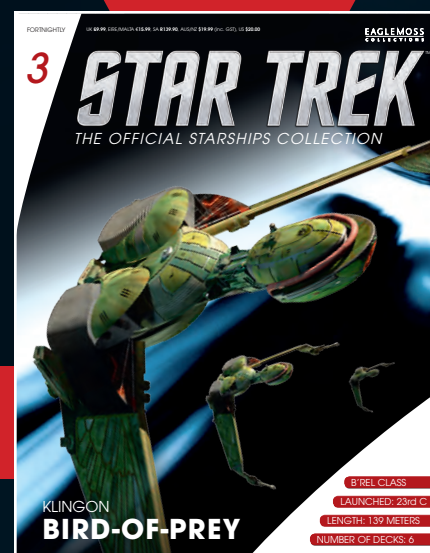
Kirk and a skeleton crew steal the *Enterprise* from Spacedock in order to return to the Genesis planet and retrieve Spock's body. When they arrive a *Klingon Bird-of-Prey* is already there and launches a surprise attack. Unable to fight back, Kirk and his small crew beam down to the planet's surface, but not before they set the auto-destruct sequence. After it explodes, they watch helplessly as the *Enterprise's* remains streak across the sky, burning up in the atmosphere.

COMING IN ISSUE 3

Klingon Bird-of-Prey



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- How Industrial Light & Magic designed and built the ship
- Filming the *Klingon Bird-of-Prey* for the big screen



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