

38

STAR TREK™

THE OFFICIAL STARSHIPS COLLECTION



STARFLEET
DELTA FLYER™

TYPE: SHUTTLECRAFT

LAUNCHED: 2375

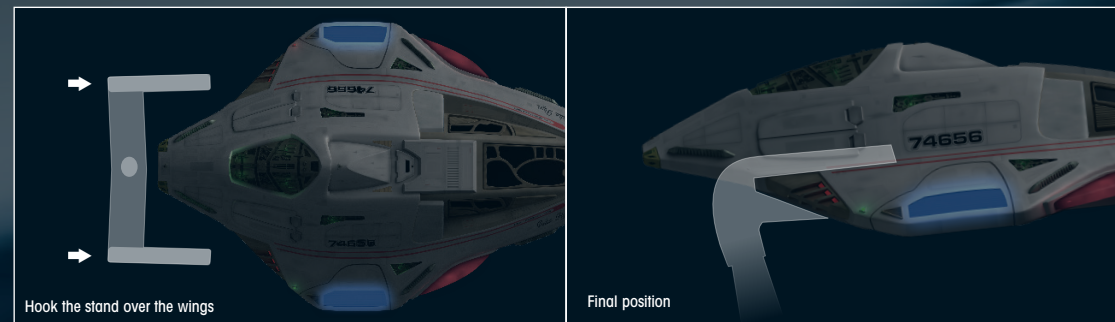
LENGTH: 21 METERS

STANDARD CREW: 4

Contents

- P04: DELTA FLYER
- P10: DESIGNING THE SHIP
- P16: CREATING THE CG DELTA FLYER
- P18: ON SCREEN

Stand assembly:



ORDER ONLINE

Order binders, missing issues or other Eaglemoss products at:
www.mycollectionshop.com

www.mycollectionshop.com

EAGLEMOSS COLLECTIONS

Eaglemoss Publications Ltd. 2014
1st Floor, Kensington Village, Avonmore Road,
W14 8TS, London, UK. All rights reserved.

™ & © 2014 CBS Studios Inc. STAR TREK and related marks and logos are trademarks of CBS Studios Inc. All Rights Reserved.

Development Director:
Maggie Calmels

STAR TREK – The Official Starships Collection is published fortnightly.

DON'T MISS AN ISSUE: place a regular order with your magazine retailer.

SUBSCRIBE and receive exclusive free gifts – www.startrek-starships.com
Call 0344 493 6091
Post the subscription form included with issues 1 to 5

BACK ISSUES
To order back issues: Order online at www.startrek-starships.com or call 0344 493 6091

UK distributor: COMAG Magazine Marketing

Find us on Facebook
Join us online for competitions, updates and more!

CUSTOMER SERVICES:
www.startrek-starships.com

UK: 0344 493 6091
startrek-ship@eaglemoss-service.com

Australia: (03) 9872 4000
bissett@bissettmags.com.au

New Zealand: (09) 308 2871
Fax: (09) 302 7661
subs@ndc.co.nz

South Africa: (011) 265 4307
service@jacklin.co.za

Malaysia: (03) 8020 7112
sales@allscript.com

Singapore: (65) 6287 7090
sales@allscript.com

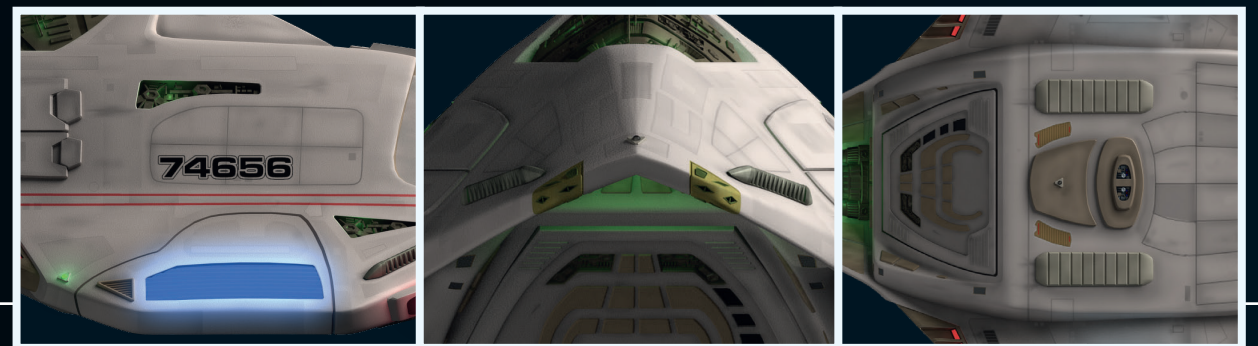
OVERSEAS BACK ISSUES
Place your order with your local magazine retailer.

Recommended age 14+.
Warning! Collectable figurines.
Not designed or intended for play by children.
Do not dispose of in domestic waste.

DELTA FLYER SPECIFICATION



| | |
|--------------|---|
| OPERATED BY: | STARFLEET |
| LAUNCHED: | 2375 |
| LENGTH: | 21 METERS |
| CREW: | 4 (STANDARD) |
| WEAPONRY: | FORE AND AFT PHASER STRIPS, PHOTONIC MISSILES |
| DEFENSES | UNIMATRIX SHIELDING, PARAMETALLIC HULL PLATING |



► The *Delta Flyer* was built by the senior crew of the *U.S.S. Voyager* NCC-74656 during their time in the Delta Quadrant – hence its name. It was faster, better armed and much more rugged than standard Starfleet shuttlecraft.



DELTA FLYER

The *Delta Flyer* was a unique shuttlecraft designed to withstand the rigors of life in the hostile Delta Quadrant.

The *Delta Flyer* was a larger, more resilient type of shuttlecraft that was developed by the crew of the *U.S.S. Voyager* NCC-74656 after they were stranded in the Delta Quadrant. It combined traditional Starfleet design principles with Borg technology, and unimatrix shielding designed by Commander Tuvok. At 21 meters in length, it was larger than a Starfleet Class-2 shuttle, but smaller than a *Danube*-class runabout.

The main proponent for the creation of the *Delta Flyer* was *Voyager*'s helmsman Tom Paris, who repeatedly championed the idea of building a specialized shuttlecraft (in his words, a "hot rod") that was more suited to the crew's needs than normal shuttles. At first, Captain Janeway and Commander Chakotay rejected his suggestion because they felt that the crew did not have the

DATA FEED

The initial idea for the *Delta Flyer* came from Seven of Nine during a mission to survey a proto-nebula aboard a Class-2 shuttle. After hearing B'Elanna Torres and Tom Paris complaining of having "Class-2 claustrophobia," a term used by Starfleet cadets when they were packed into shuttles for weeks at a time as part their training, Seven suggested that they design a larger, more efficient shuttle.

time to design and build a ship from scratch, so Paris began work on the design in his spare time.

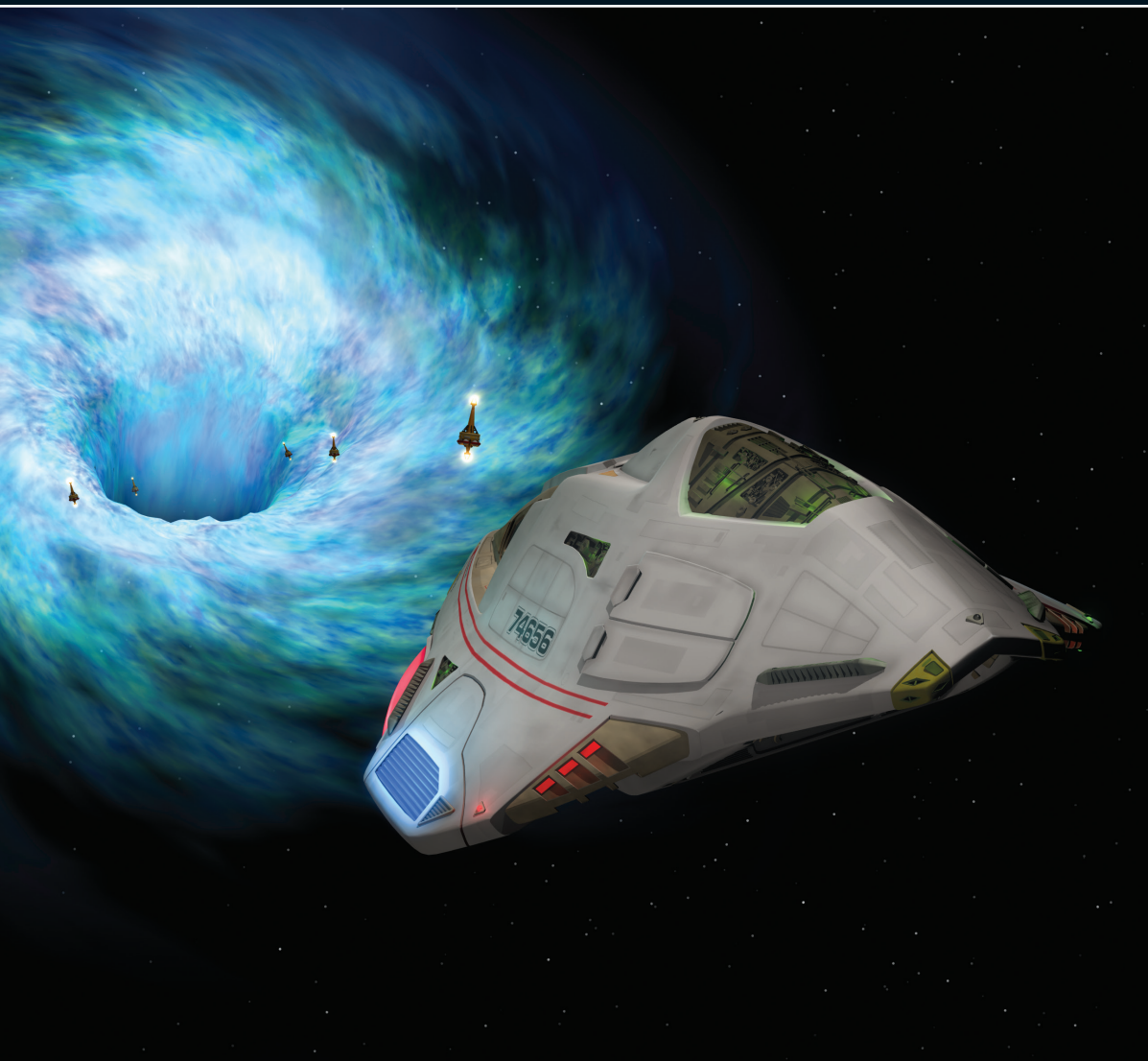
BORN OF NECESSITY

In 2375, the argument swung decisively in his favor; the crew had to retrieve a multiphasic probe from the atmosphere of a Class-6 gas giant to prevent it falling into the Malon's hands. Since no alternative was available, Captain Janeway gave the go-ahead to build the *Delta Flyer*. The entire senior staff contributed to the project, adapting and improving Paris's initial design.

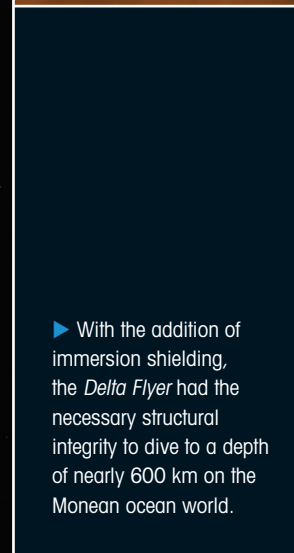
The most serious design problems were related to the *Delta Flyer*'s structural integrity system. Retrieving the probe from the gas giant's atmosphere pushed the small craft to its limits. B'Elanna Torres suggested using titanium alloys for the hull, but on Seven of Nine's recommendation the crew chose tetraburnium because of its higher structural integrity characteristics. Even so,



► Working around the clock, the *Delta Flyer* was built in just a few days. Alloys and new design components were replicated, while spare parts from storage were also used in its construction. It featured retractable warp nacelles, unimatrix shielding and Borg-inspired weapons. Tom Paris described it as an "ultra-responsive hot rod."



◀ Shield enhancements allowed the *Delta Flyer* to withstand huge gravimetric distortions and enter a graviton ellipse where it found Ares IV, an early Mars mission command module that had gone missing in 2032.



▶ With the addition of immersion shielding, the *Delta Flyer* had the necessary structural integrity to dive to a depth of nearly 600 km on the Monean ocean world.



▲ The *Delta Flyer II* could achieve even faster sublight speeds than its predecessor thanks to its pop-out impulse thrusters. These proved especially useful when navigating the course near a Möbius Inversion during the Antarian Trans-Stellar Rally.

the pressures involved were so great that the ship could maintain a structural integrity field for only a few minutes before microfractures began to form in the parametallic hull. The problems were never entirely solved, but the ship successfully retrieved the probe.

ADVANCED SYSTEMS

The *Delta Flyer* was equipped with warp and impulse engines, a tractor beam emitter, and a narrow beam transporter; it used a tuned, circumferential warp reaction chamber and extendable warp nacelles. When fitted with a Borg transwarp coil, it was more than capable of traveling at transwarp velocities. The ship was also capable of atmospheric flight and landing on the surface of a planet.

Power distribution was maximized by the use of isomagnetic EPS conduits in the plasma manifold,

and many of its systems incorporated Borg enhancements suggested by Seven. In particular, the *Delta Flyer's* weapons systems were inspired by Borg technology; it had fore and aft phaser strips, and a nose-mounted microtorpedo launcher that could fire photonic missiles.

The ship's design proved extremely adaptable. Shortly after the crew constructed the *Delta Flyer*, they modified its thrusters and added immersion shielding so that it could operate deep within the Monean ocean planet. On another occasion, the ship was modified so that it could generate multiadaptive shielding that rendered it invisible to the Borg's sensors, allowing the crew to steal a transwarp coil from a damaged *Borg sphere*.

The *Delta Flyer's* resilience was tested time after time, and it even survived a crash landing that resulted in it being buried 3 km beneath the surface of a Class-M planetoid. It also withstood

the extreme subspace distortions inside a graviton ellipse while attempting to retrieve Ares IV, an early Mars mission spacecraft from 2032.

TAKING ON THE BORG

The *Delta Flyer* ultimately met its demise in early 2377, when it was used in a daring raid on a *Borg tactical cube* as part of a mission to help the drones of Unimatrix Zero. The Borg Queen targeted the *Flyer* and destroyed it, but not before the occupants beamed onto the *cube*.

The *Delta Flyer* had proved so useful that the *Voyager* crew decided to build another one. The *Delta Flyer II* featured a number of improvements on its earlier incarnation. These included pop-out impulse thrusters that provided greater sublight speeds. The interior was redesigned for greater comfort and its arsenal was supplemented with a pulse-phased weapon system.

The *Delta Flyer II* was soon put through its paces when it took part in the Antarian Trans-Stellar Rally. This 2.3 billion km long sub-light race was the ultimate test of a ship's design and the pilot's skills, as obstacles included dwarf star clusters, K-class anomalies and subspace distortions. The *Flyer II* was winning the race when it was discovered that it had been rigged to explode at the finish line. Its destruction was averted at the last second after its warp core was ejected into a Class-J nebula.

As with its predecessor, the *Delta Flyer II* went on to play a vital role in routine scientific and diplomatic missions, as well as being used to scout for supplies, such as dilithium. It also proved pivotal on several occasions in helping to save *Voyager* and its crew, most notably in 2377 when it was used to rescue most of the ship's personnel after they had been abducted and brainwashed by a group of aliens called the Quarren.

▲ After a mission where the *Voyager* crew stole a Borg transwarp coil, Seven of Nine was captured by the Borg. The coil was then installed on board the *Delta Flyer*, and used to travel to the vast Borg Unicompex to rescue Seven.

INTERIOR LAYOUT

The interior of the *Delta Flyer* comprised of a cockpit, a small mid section and an aft compartment that featured wall-mounted work stations, a replicator, a retractable bio-bed and a caged locker containing spacesuits and hand-held weapons.

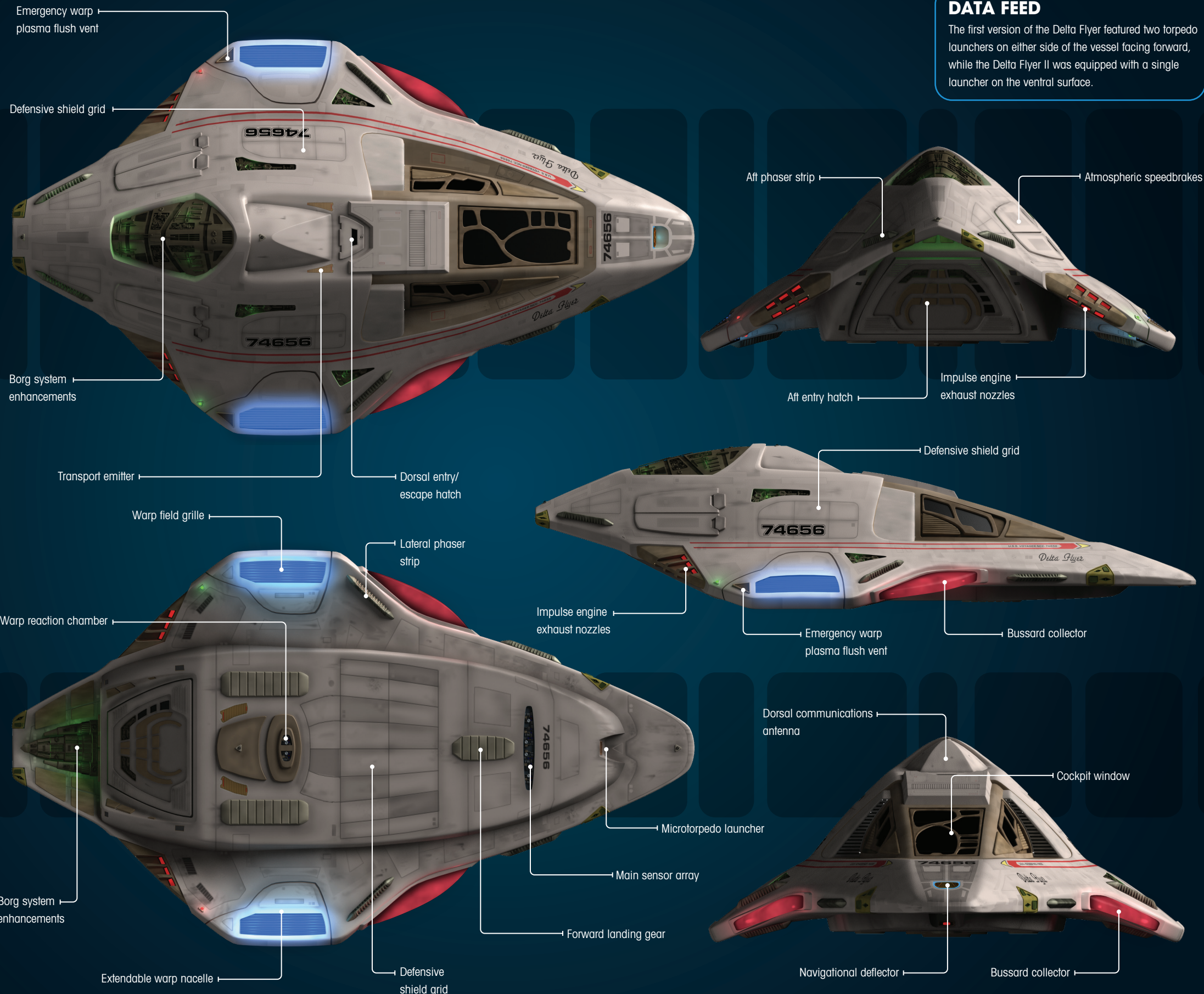
The cockpit featured distinct workstations for tactical, operations and engineering personnel. A ramp led down to the pilot's seat that sat alone in the nose of the cockpit. In the original *Delta Flyer*, Tom Paris designed several retro control panels that he claimed allowed him to 'feel' how the ship was responding. In the *Delta Flyer II*, the flight controls were updated with two identical joysticks that the pilot used to change course and speed, providing an extremely responsive method of control.



▲ Instead of a standard Starfleet LCARS interface, the pilot's station featured analogue style dials, toggle switches and levers, while the *Delta Flyer II* also featured two manual steering columns.



▲ The large aft compartment on the *Delta Flyer* provided the occupants with space to work, relax or sleep. It even featured a retractable bio-bed in the event of a medical emergency.



DATA FEED
 The first version of the Delta Flyer featured two torpedo launchers on either side of the vessel facing forward, while the Delta Flyer II was equipped with a single launcher on the ventral surface.

SHUTTLECRAFT LOSS

It was not surprising that the crew of the *U.S.S. Voyager* felt the need to create the *Delta Flyer*. By the end of 2375, they had crashed, destroyed, or otherwise lost a total of 18 shuttlecraft.

WELL SHIELDED

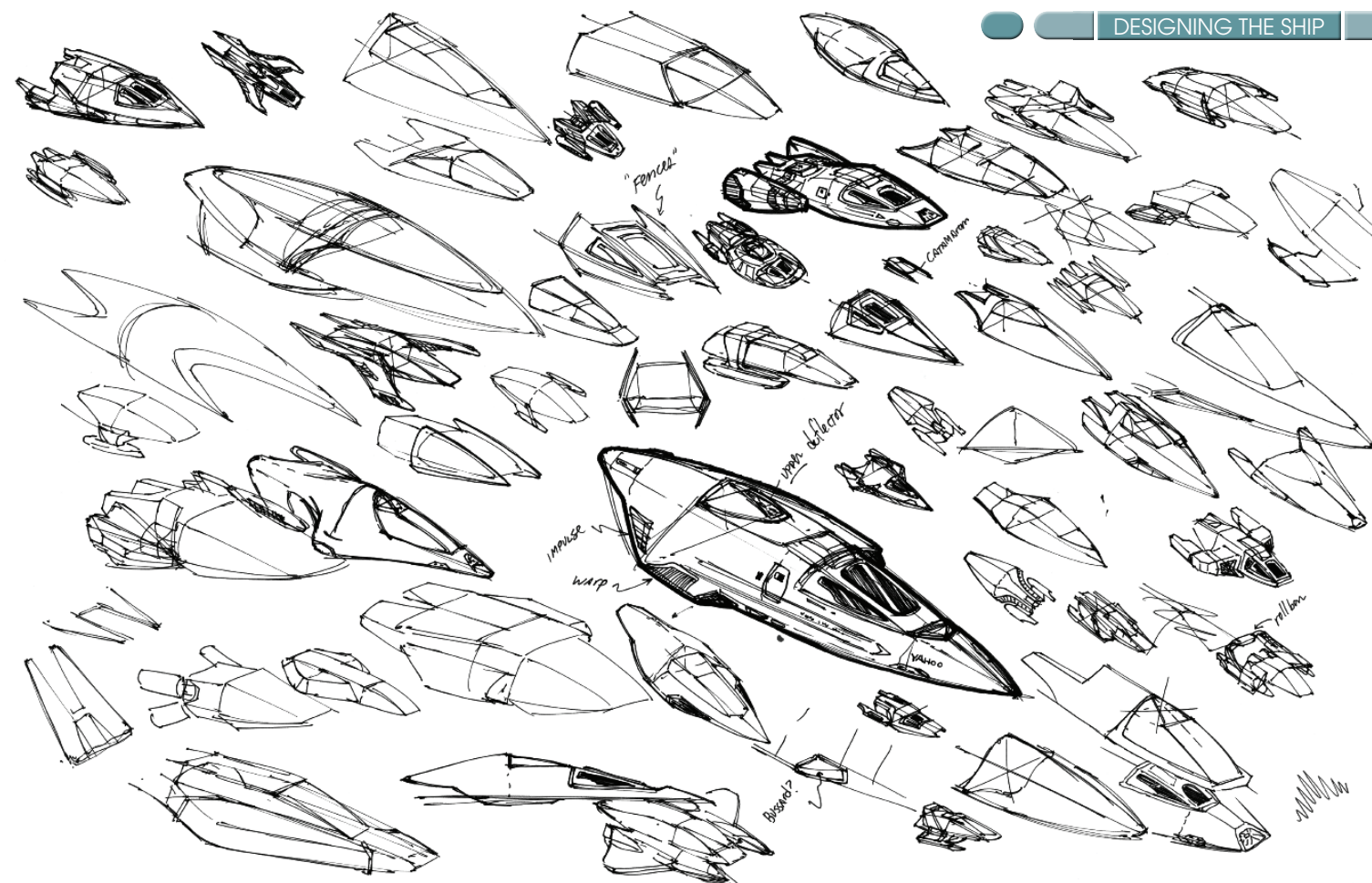
The *Delta Flyer* was designed to survive extremely hostile environments. In addition to utilizing parametallic hull plating, it also featured unimatrix, immersion and multiadaptive shielding.

NO EMBELLISHMENTS

Tom Paris wanted to add dynametric tail fins to the *Delta Flyer*, as he felt they would help it look "mean" and make other ships think twice before taking it on. But Tuvok told him to take them off as they served no practical purpose.



▲ The design brief for the *Delta Flyer* called for a tough, all-purpose shuttle that combined Starfleet and Borg technology – and, of course, it should look cool.



DESIGNING THE

DELTA FLYER

STAR TREK: VOYAGER's resident illustrator Rick Sternbach explains the thinking behind his design process for the creation of the *Delta Flyer*.



▲ Rick Sternbach carefully worked out where all the main components should be placed when creating the *Delta Flyer*.

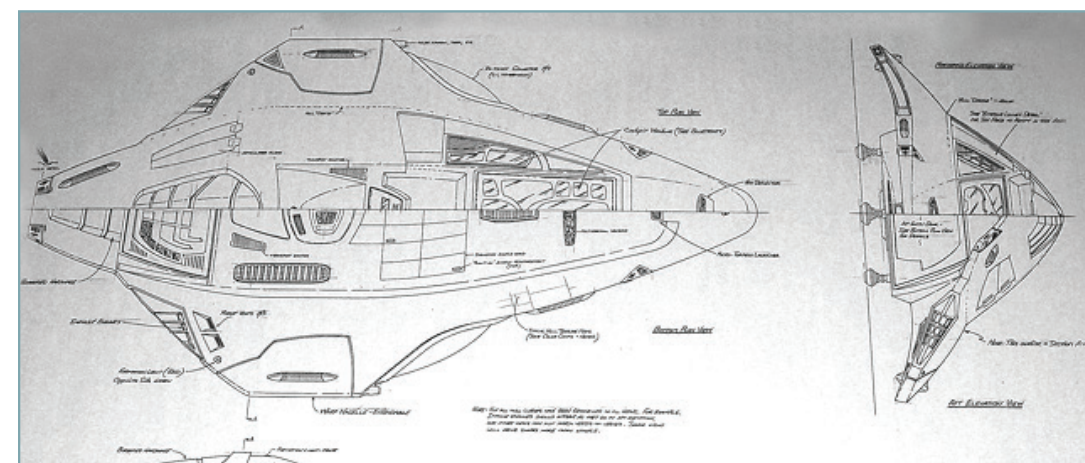
The *Delta Flyer* began its life as a season five writer concept for an 'all-environment shuttle,' capable of deep space missions, atmospheric flight, planetary landings and life in the hostile Delta Quadrant. As we've seen, it also made a few excursions into deep ocean water, solid rock and a graviton ellipse, recovered and refurbished each time to carry on: the 'little ship that could.'

The hull design process began in June 1998, with the usual page upon page of felt pen

doodles, as I looked for visual inspirations to get a sense of the overall shape and function of the ship. Descriptions of the exterior and interior came from the writers and producers as the episode 'Extreme Risk' evolved. The crew cabin would accommodate at least four, with Tom Paris's single offset pilot station at the front, a departure from the tandem seating we knew from previous shuttles and the runabout.

With the cockpit shape and window frames determined by the set designs, the

▲ In searching for the right shape for the *Delta Flyer*, Sternbach began by making a series of doodles. This helped him crystallize his thoughts as he focused in on a design that fulfilled the brief.



▲ The design for the *Delta Flyer* went through numerous stages before Sternbach drew up a set of detailed blueprints for the finished shuttle that included annotated notes on all its main features.

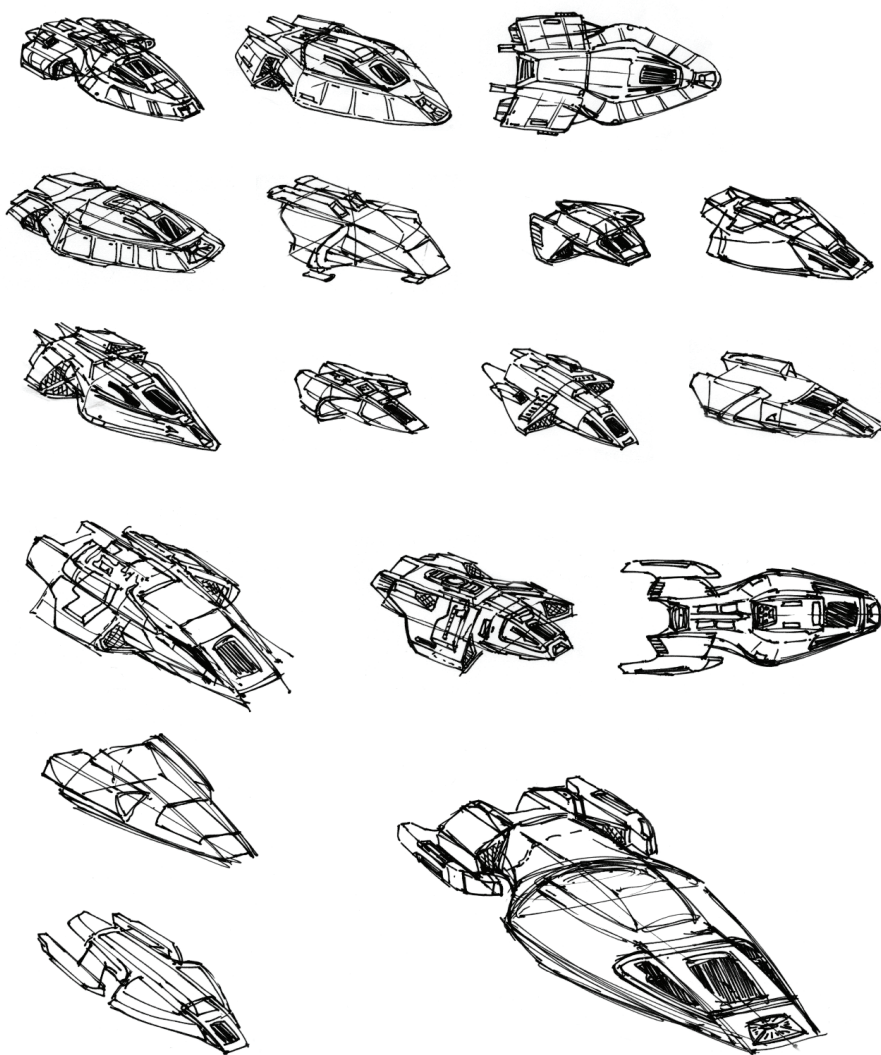
exterior hull would mirror those elements and employ that styling, with additional key bits of Borg technology.

POSSIBLE DIRECTIONS

In the doodle stage, I explored various simple shapes I thought might be plausible extensions of Starfleet hardware, from familiar wedges to streamlined darts. A few of the doodles looked like miniature *Voyagers*, others like larger versions of shuttles we already had. Some had elements of the runabout and the *Defiant* shuttle *Chaffee*.

Idea can come from everywhere and I scribbled them down as they occurred to me, even if they didn't get included in the final design, because one never knows when some great little shape or techy idea will be useful later on.

Even in these preliminary sketches, a lot of questions popped up that helped narrow down the design: Warp pods or not? Where to put the navigational deflector. Phasers? RCS thrusters? How do you even get in? One morning, visual effects producer Dan Curry stopped by, glanced over my shoulder, and noticed a particular pointy



▲ These early doodles saw the *Delta Flyer* begin to take shape as Sternbach experimented with different looks for the nose and warp nacelles.

hull concept, and asked if I wouldn't mind developing it further. The embryonic *Delta Flyer* began to grow.

MAKING PROGRESS

A few large blue pencil drawings followed, refining the original doodle into a more solid mass onto which I could add details such as impulse nozzles, blended warp pods in the wings, an entry hatch, Bussard fuel collectors, and phasers. The first few passes saw some rather heavy Klingon shield plating eliminated, and far too many Borg enhancements (mounted in small cutouts) toned down to just a few, but still nicely visible. A nose-mounted torpedo launcher was moved underneath, and two pulse cannons were scratched, but these changes were easy to deal

with. The approvals process proceeded with only a few additional notes from the producers and visual effects, which asked me to shorten and round off the pointy nose and widen the wings.

THINKING AHEAD

A number of features were added just in case they were needed in later episodes. Vents and hatches delineated the warp reactor on the underside; the reactor itself was a flat 'pancake' matter-antimatter chamber built into the floor. Emergency plasma flush vents were cut into the lower wings and a large drop-down Borg-style hatch in the back allowed for entry and for 'mission modules' such as the laboratory to be swapped in and out. A small escape hatch was built into the roof, should the transporters and aft hatch fail, and 'speed brakes' were scribed into the aft flanks, which could hide all sorts of new devices.

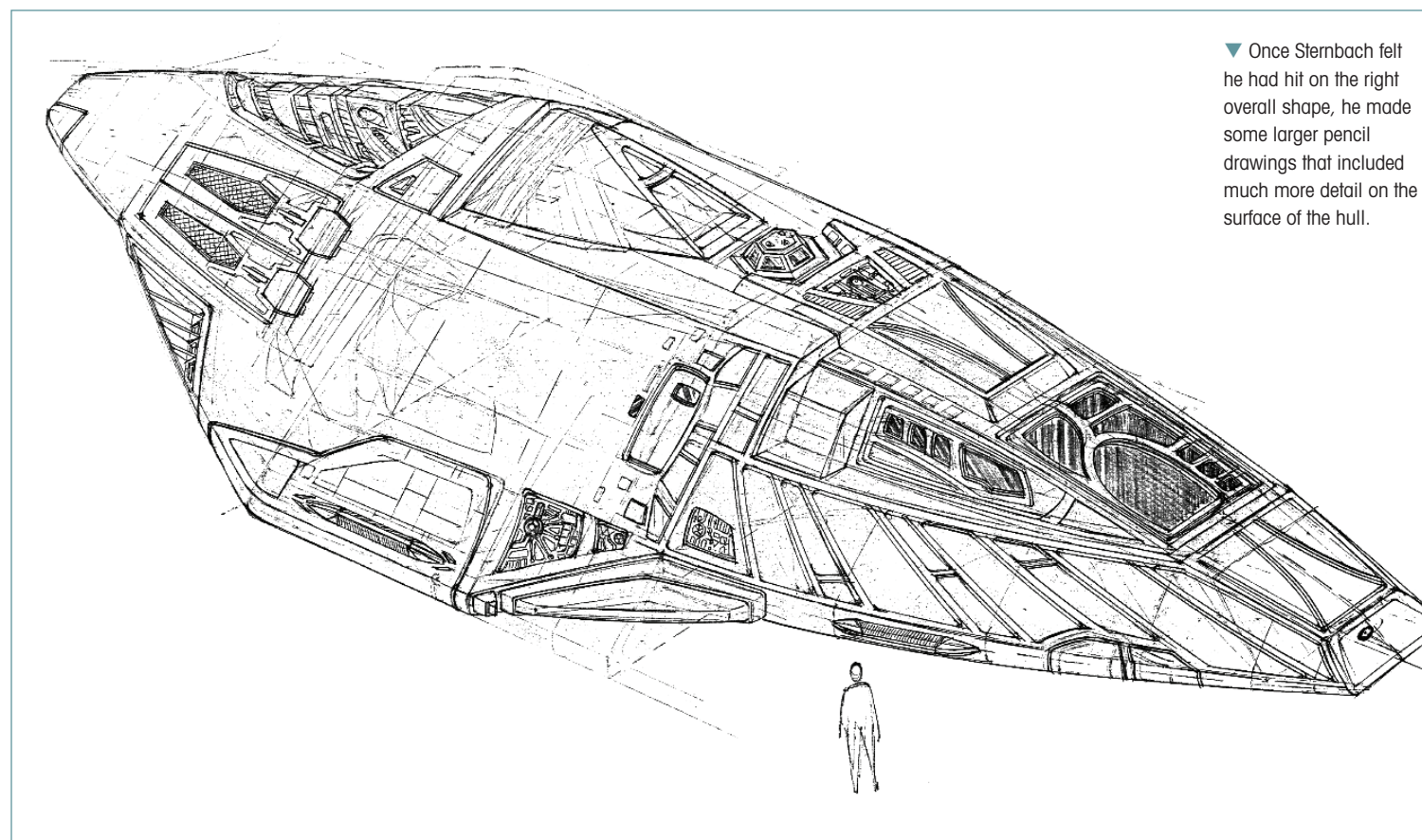
Not only did the *Delta Flyer* have all the right parts, it looked cool. Now it was more or less complete and could move to the blueprint stage.

Even though the *Delta Flyer* would be executed as a computer generated model, I worked up the blueprints as if the ship were to be built as a physical miniature, since precise orthographic views (top, bottom, side, front, and back) were often necessary for both methods. CG modeler Rob Bonchune at Foundation Imaging scanned and input the drawings into Lightwave, 'lofting' the hull into a set of smooth, 3-D, shaded objects.

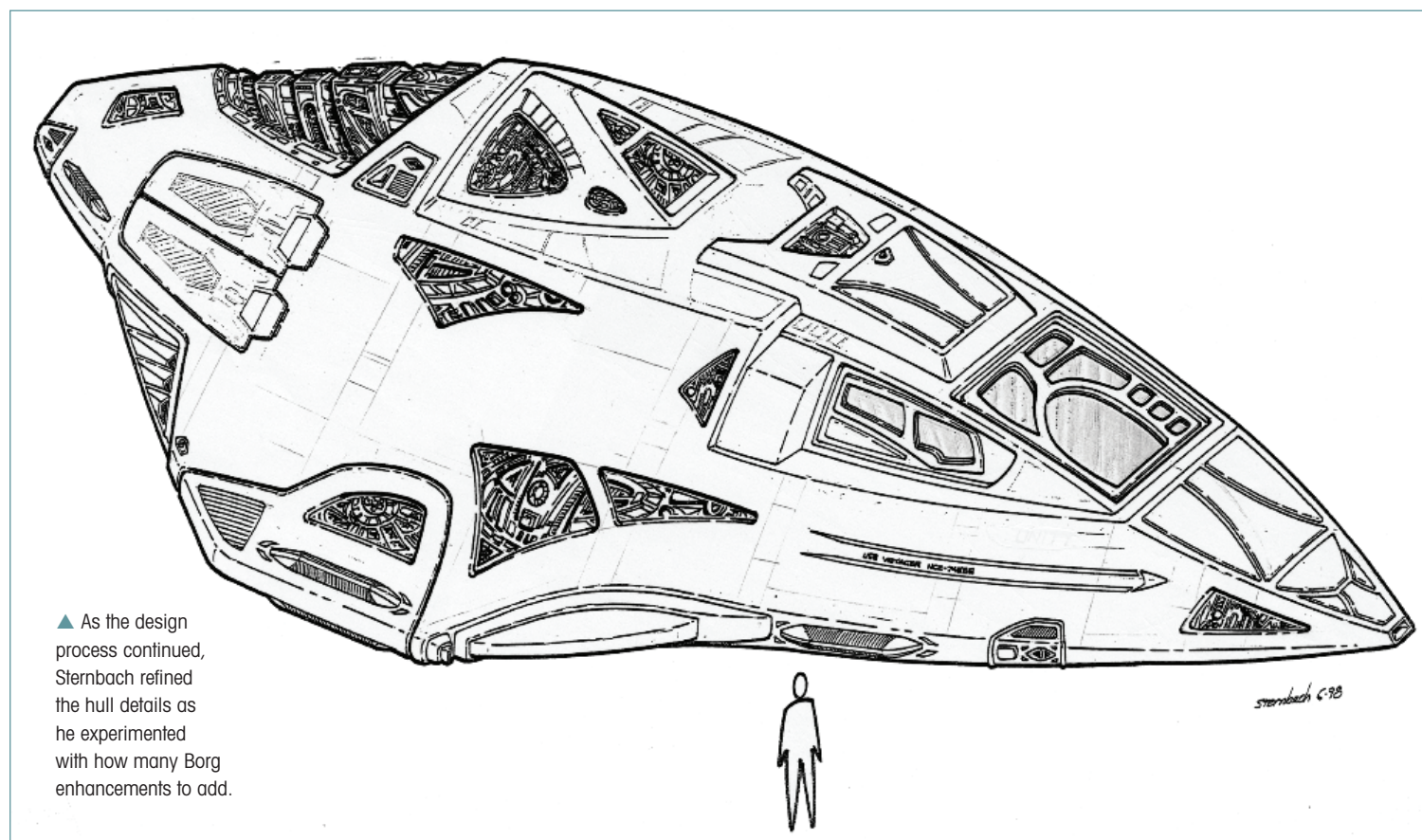
PERFECT DETAILS

Set blueprints of the cockpit windows were provided to ensure a match with the interior, and color specifications were given to Foundation Imaging for component 'painting' and building the surface texture maps, based partly on the *Delta Flyer* set walls and on existing Starfleet hulls and known Borg hardware.

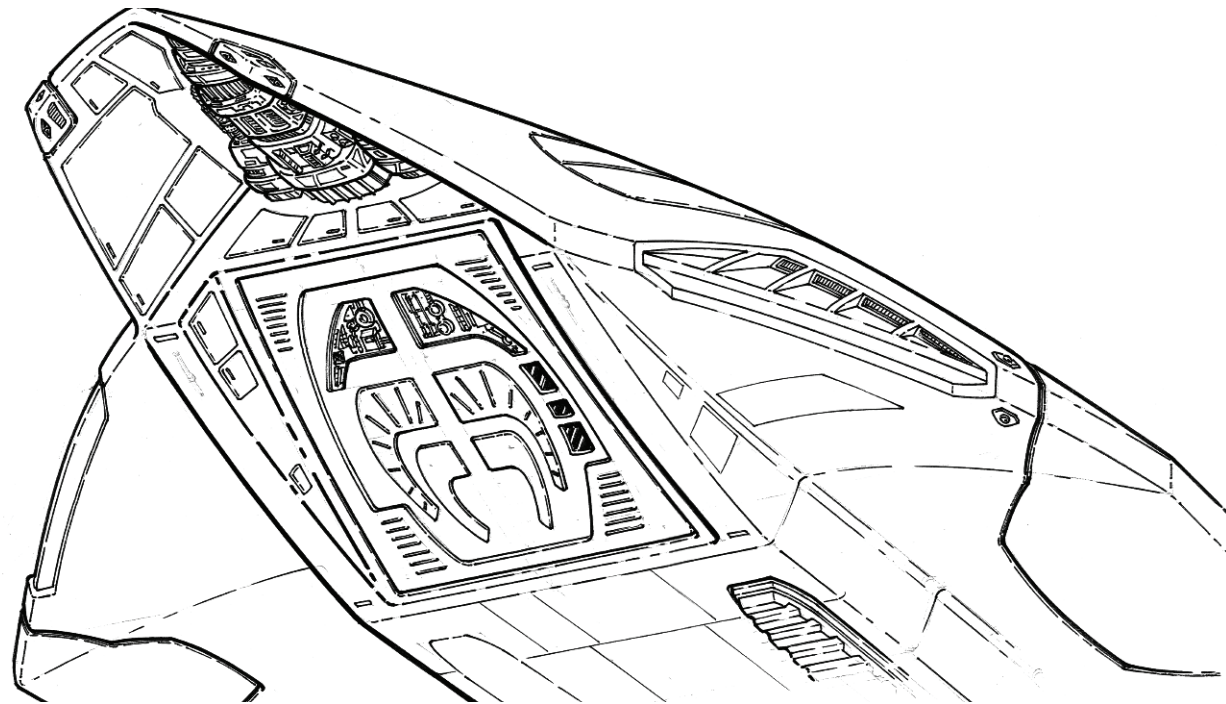
I stayed in touch with Rob and our VFX supervisors during the CG process, giving notes and detail sketches on Starfleet hardware, minor changes to the set windows, and insignias and markings. A few hull parts that were somewhat difficult to convey in the blueprint views were worked out in small-scale foamcore models. Some modifications were made on the fly, such as the addition of the familiar blue warp grilles and the



▼ Once Sternbach felt he had hit on the right overall shape, he made some larger pencil drawings that included much more detail on the surface of the hull.



▲ As the design process continued, Sternbach refined the hull details as he experimented with how many Borg enhancements to add.



▲ All elements of the design were thoroughly thought through, and Sternbach added a large hatch at the rear of the *Delta Flyer*, which could be used to install different mission modules, such as a lab.

relocation of the wing phaser strips. In the areas of lighting and articulated parts, such as extendable landing pads, the speed brakes, hatches, and the warp pods, suggestions were given to visual effects to be passed on to Foundation.

In a reverse of the need for set drawings to make the CG parts, details of the CG model were required by the studio mill to build a pair of small walls behind the cockpit set. This served to hide a set of welded steel frames visible outside the windows, and were finished off with the proper colors and shapes to appear like the impulse intakes that would be seen looking aft.

ADDITIONS AND MODIFICATIONS

Two years after the initial inception of the *Delta Flyer*, we were still working with the ship, making additions and modifications to the two sets and the CG model. Lifeboat pods were theoretically squeezed into the aft section, and chunks of hull plating were torn away in the episode 'Good Shepherd'.

The lifeboat pods were particularly fun to invent, but difficult to place. They were supposed to be located just aft of the registry number underneath two flaps, along the same general fore-aft line as the hull curve.

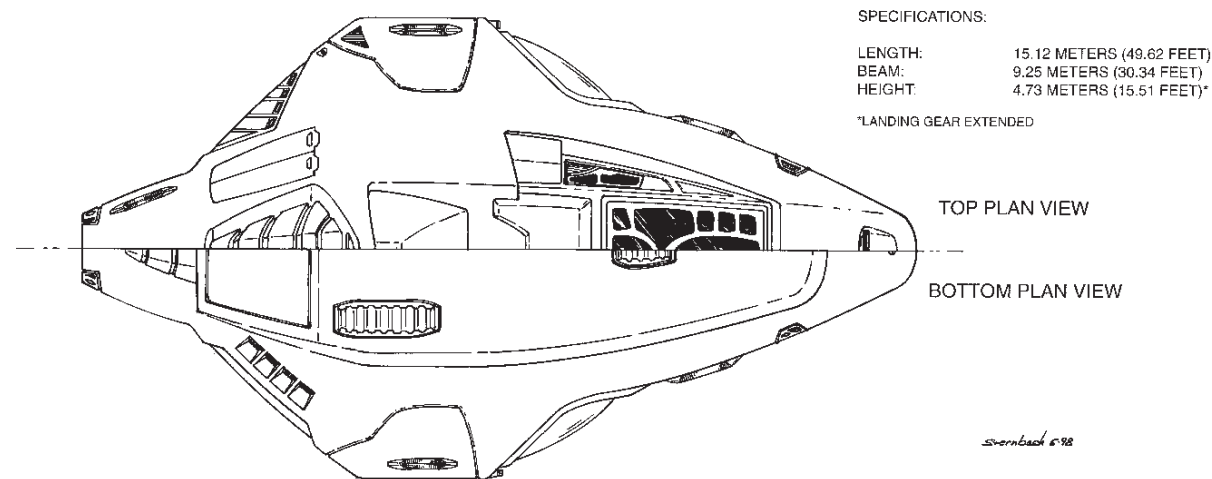
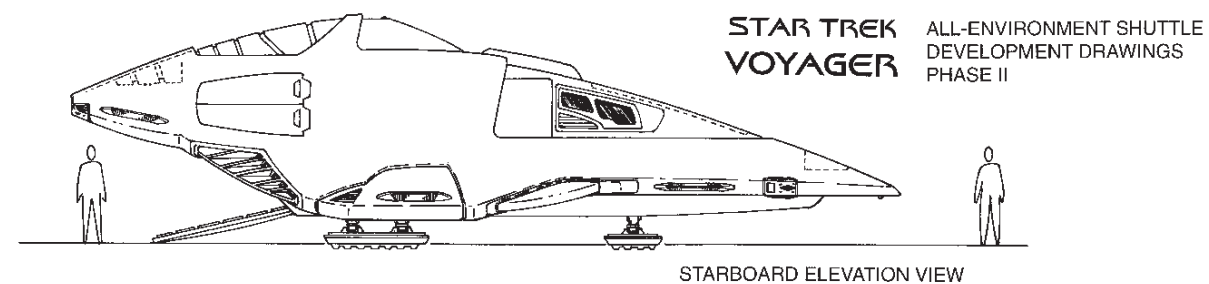
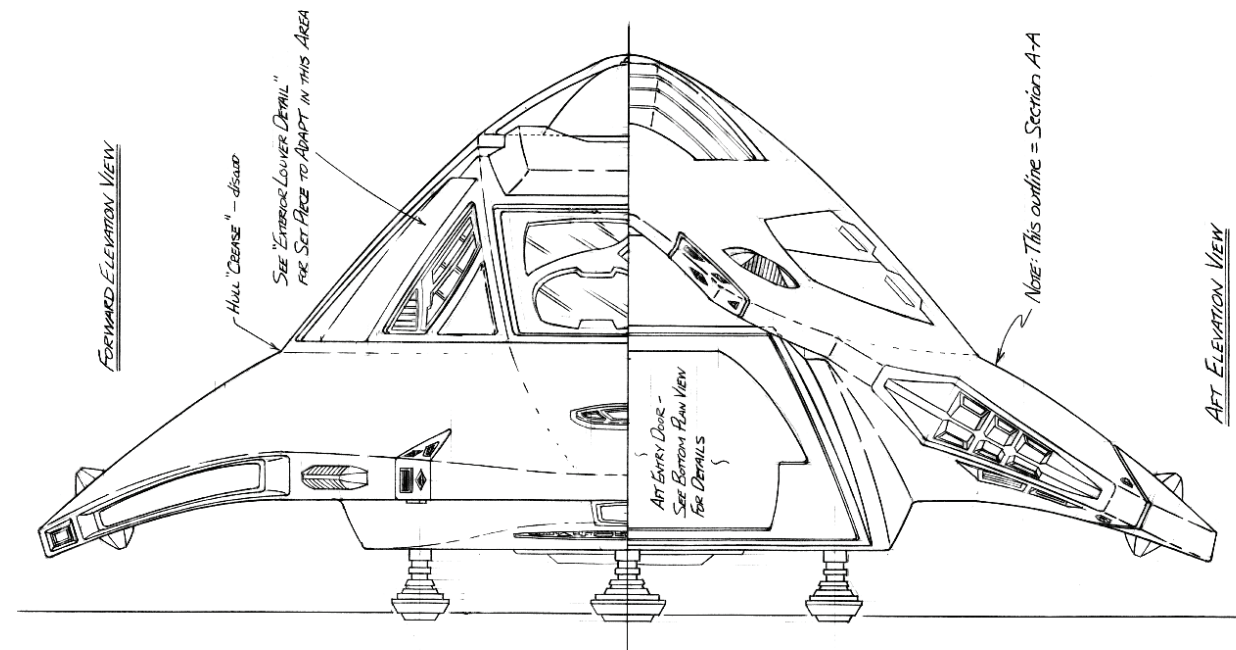
I reasoned that the launch of these pods would

be similar to firing an aft torpedo tube on a submarine, so that if the *Delta Flyer* was headed towards certain destruction, the escape pod would shoot back along the flight vector.

SPATIAL PROBLEMS

The *Delta Flyer* was supposed to hold four escape pods, but they added to a well known but thorny problem. As sometimes happens with cinematic spacecraft (not to mention some cinematic boats, aircraft, and cars), the *Delta Flyer* appeared appreciably larger inside than outside. The aft cargo compartment was being cooked up separately by set designer Richard James, and there really wasn't any place to indicate entry hatches for the lifeboats. This necessitated a recalculation of the dimensions of the 'actual' *Delta Flyer* from a length of about 15 meters (49 feet) to perhaps 21 meters (69 feet). Similarly, when we built the aft lab compartment for 'Timeless,' it was a real challenge to fit everything within the conceptual space. Technically, the stasis chamber where Seven of Nine was stored stuck out into space, while the revised dimensions meant that the wingtips only just cleared the shuttlebay opening!

As an exercise in blending Starfleet and Borg styles together to make a working spaceship, the



Delta Flyer was a fun assignment and definitely one of my favorite designs when I look back on my time working on *STAR TREK*. Given the ingenuity of the *Voyager* crew at building shuttlecraft, it was not surprising that a new *Delta Flyer II* was created after the first one was pummeled into tetraburnium fragments by the Borg in 'Unimatrix Zero, Part I.'

The updated *Delta Flyer II* was almost identical on the outside to its predecessor, although we did get the chance to add some cool pop-out impulse thrusters, which boosted its sublight speeds. This feature added to the *Delta Flyer II*'s status as a 24th century 'hot rod,' and it was great to see it take a 'starring' role in the episode 'Drive.'

◀ Sternbach worked up a precise set of orthographic views of the *Delta Flyer* for Rob Bonchune, the CG modeler at Foundation Imaging, so he knew exactly where to add all the hardware.

◀ The original construction drawings showed that the *Delta Flyer* was nearly 50 feet long, but it was decided later that the rear compartment needed to be larger, so the ship's length grew to 70 feet.

CG artist Rob Bonchune went to enormous lengths to ensure that the CG *Delta Flyer* matched Rick Sternbach's design blueprints.

By the fifth season of *STAR TREK: VOYAGER*, the VFX company Foundation Imaging was creating all the CG ships for the show. The task of building the *Delta Flyer* was given to one of their modelers, Rob Bonchune. He would go on to become senior CG supervisor for the last seven years of the franchise's television run, but back in 1998 he had never built a *STAR TREK* CG ship entirely on his own before.

"In case I never got to do another ship again, I wanted to do something on *STAR TREK* that I'd built from scratch – and they gave me the *Delta Flyer*," said Bonchune. "At the time, it scared the hell out of me."

Once Bonchune had been entrusted to build such an important ship, he was determined to follow the blueprints Rick Sternbach had drawn up as closely as possible. "I was meticulous that way," said Bonchune. "They'd give me a blueprint and I'd do everything I could to match it. I wanted Rick to say, 'That's exactly what I drew.' I didn't want there to be an iota of difference between the reference material and the finished CG model."

Of course, translating 2-D blueprints into a realistic 3-D model is not straightforward, and there were certain elements that proved problematic. "It was tough to get the curvature of the hull right," said Bonchune. "It took a while to figure out how to do it. Luckily, sitting in front of me in the office

was Tareq Mirza, an excellent organic modeler. I could ask his advice, and he would give me tricks on how to make it work. It was especially useful back then because the modeler was much more important in the process when it came to making things look organic.

"The hardest thing to do, though, was the air brakes on the side. Today it would be easy, but back then it was difficult because they were on a curved hull, and not just in one dimension, but really in three dimensions. To get them to hinge upwards on that part of the hull was tough, and it took a lot of finagling to get the pivot point right."

Another element that Bonchune was pleased with, and one where he added a touch of his own creativity, was in the creation of the red Bussard collectors. With today's CG software, these elements would be straightforward, but back in 1998 it took more ingenuity.

"We didn't have translucency back then," said Bonchune, "so it was difficult to make those Bussard collectors look right. They were an organic shape and not the typical round things where you could have revolving lights. I really wanted them to look like someone had put a red light behind frosted clear resin. Back then, it was kind of a hard thing to do. You can see the frosted surface and what looks like two light bulbs in there. To me, that was a touch that I was able to add."

CREATING THE CG

DELTA FLYER

▲ The CG model of the *Delta Flyer* matched Rick Sternbach's design exactly, with its length, curves and details being identical to the blueprints.



▲ The lighting on the *Delta Flyer* was one area where Bonchune could add his own creativity, and help make the ship look more organic.



▲ Bonchune revealed that the air brakes were the hardest element to get right, as they had to hinge upwards on a curved part of the hull.

ON SCREEN



- FIRST APPEARANCE: 'EXTREME RISK' (VOY)
- TV APPEARANCES: STAR TREK: VOYAGER
- DESIGNED BY: Rick Sternbach

KEY APPEARANCES

STAR TREK: VOYAGER

'Good Shepherd'
A crew efficiency review reveals that three crew members from the lower decks are failing to meet expectations. Seeking to guide her strays back to the flock, Captain Janeway orders them to join her on an astronomical survey aboard the *Delta Flyer*. What should be a routine mission soon goes wrong when something hits the *Delta Flyer*, disabling its warp drive. Unable to contact *Voyager*, the captain and the three misfits must find a way out of their predicament, while also battling what appears to be dark matter life forms.

STAR TREK: VOYAGER

'Drive'
While out testing the new *Delta Flyer II*, Tom Paris gets involved in an impromptu race with a ship piloted by an alien woman named Irina. She later invites him to take part in a race that is being held in celebration of a peace treaty between four races who were recently at war. Paris readily agrees, forgetting that he has promised to go on holiday with B'Elanna Torres. Trying to save their relationship, Torres takes part in the race as Paris' co-pilot, unaware that the *Delta Flyer* has been rigged to explode by Irina, who opposes the peace.

TRIVIA

One of the ships taking part in the Antarian Trans-Stellar Rally (seen in the top right of the picture below) in the *STAR TREK: VOYAGER* episode 'Drive' was a reuse of the coaxial drive vessel first seen in the fourth season episode 'Vis à Vis.' This same ship also made brief appearances in the episodes 'The Voyager Conspiracy' and 'Workforce.'



Cyia Batten, who played Irina in the *STAR TREK: VOYAGER* episode 'Drive', previously appeared in *STAR TREK: DEEP SPACE NINE* as Gul Dukat's daughter Tora Ziyal. She was also one of the original members of the pop group Pussycat Dolls.



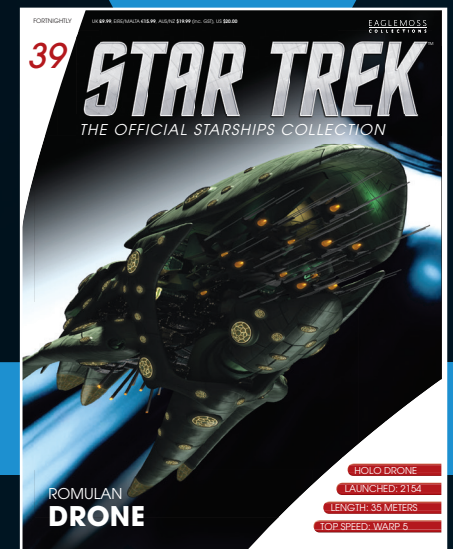
Tom Morello, the lead guitarist from rock bands Rage Against the Machine and Audioslave, made a cameo appearance in the *STAR TREK: VOYAGER* episode 'Good Shepherd.' He played Crewman Mitchell, who was stationed on deck 15 and directed Captain Janeway to junction room 16. Morello, a huge fan of *STAR TREK*, also made a brief appearance as a Son'a officer in *STAR TREK: INSURRECTION*.

COMING IN ISSUE 39

ROMULAN DRONE-SHIP



EVERY FORTNIGHT AT YOUR NEWSAGENT



Inside your magazine

- In-depth profile of the Romulan Drone-Ship, an advanced warship from the 2150s that could assume the appearance of other vessels
- How the design of the Romulan Drone-Ship evolved from a giant flea
- Creating the CG model of the Romulan Drone-Ship



STAR TREK™

