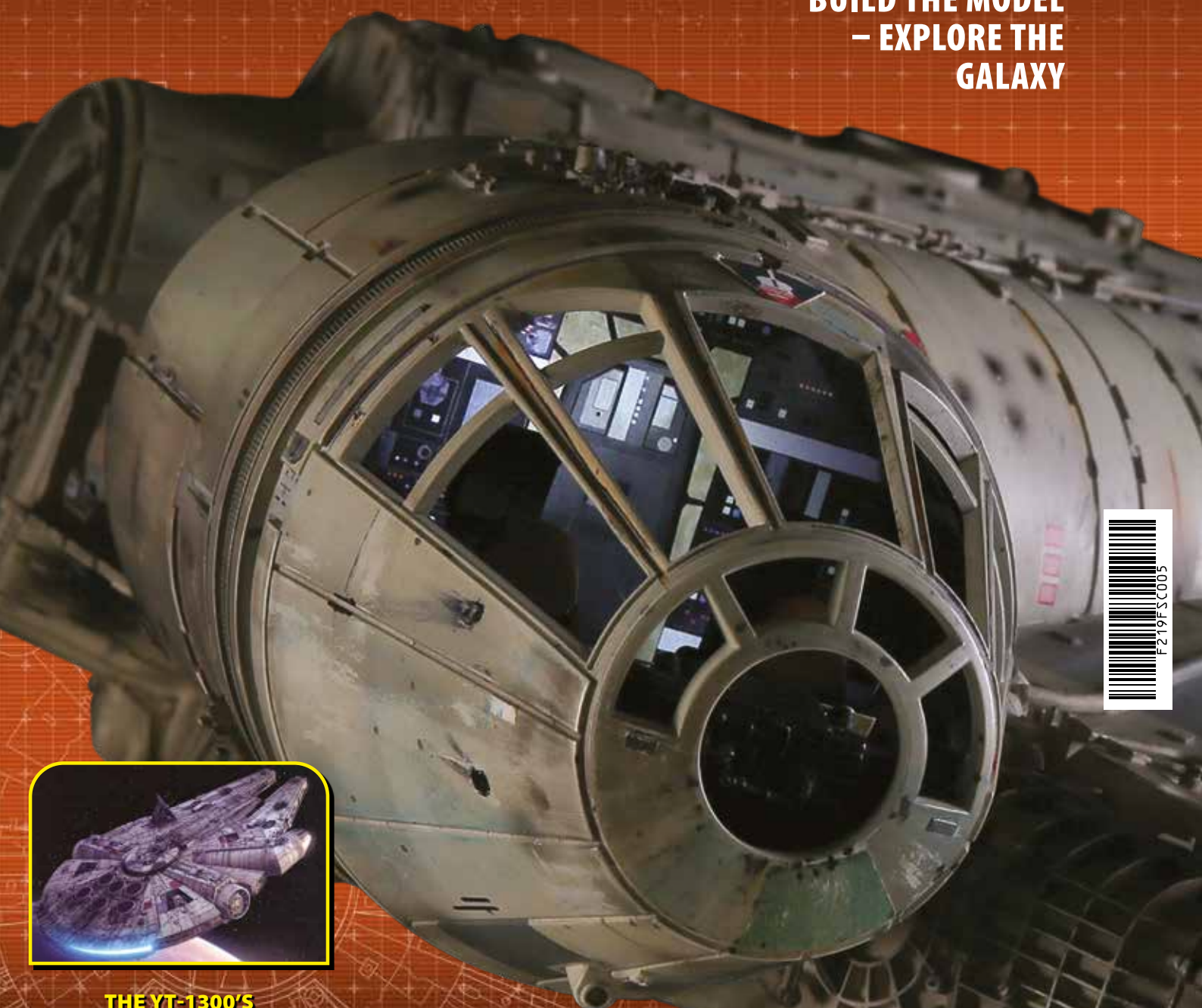
# STAR WARS MILLENNIUM FALCON

## BUILD THE MODEL – EXPLORE THE GALAXY





THE YT-1300'S MODULAR CONFIGURATION

F219FS0005

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# STAR WARS MILLENNIUM FALCON

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## MAKERS OF THE MILLENNIUM FALCON

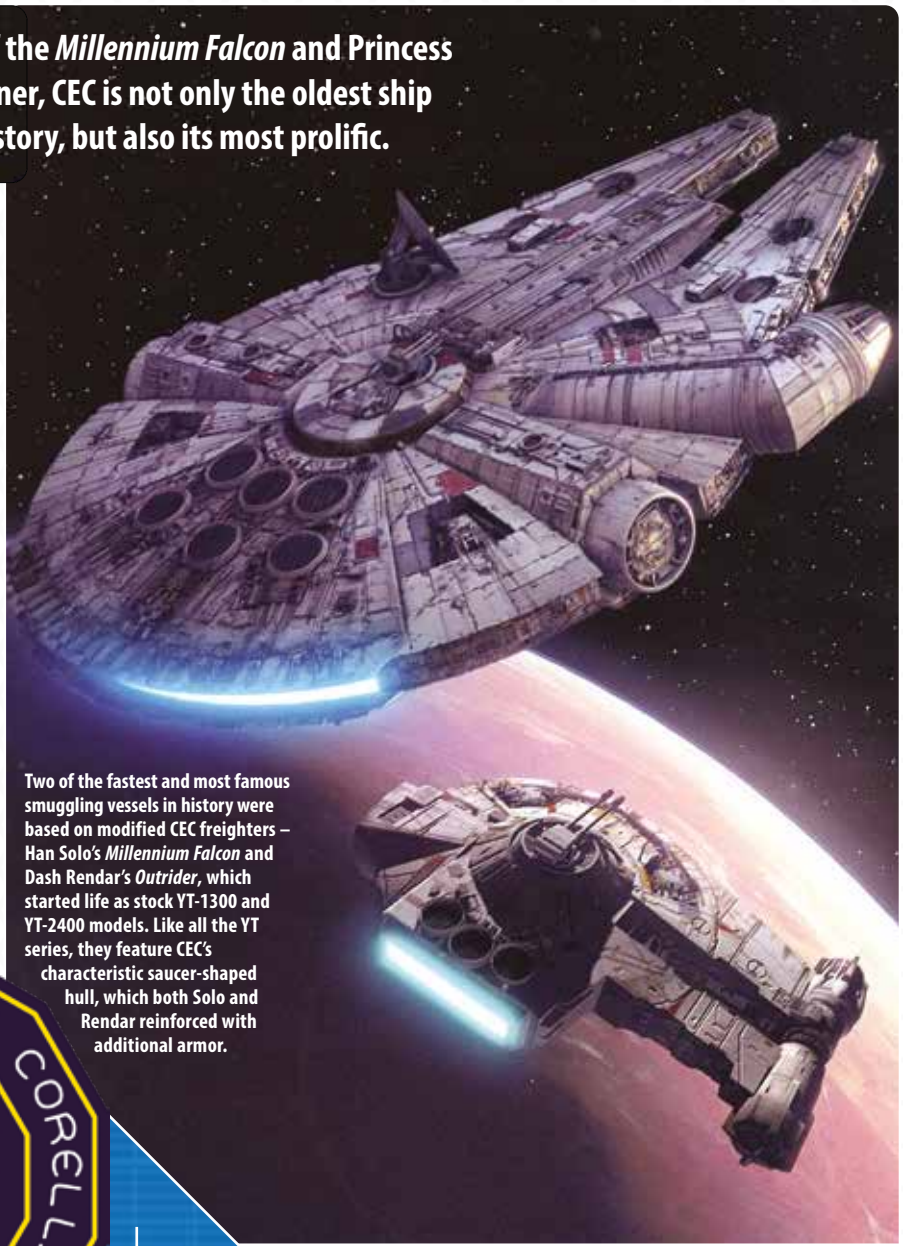
# CORELLIAN ENGINEERING CORPORATION

**Famous as the original builders of the *Millennium Falcon* and Princess Leia Organa's Rebel Blockade Runner, CEC is not only the oldest ship manufacturer in the Republic's history, but also its most prolific.**

The huge Corellian Engineering Corporation (CEC) is one of the galaxy's 'big three' starship manufacturers, along with Kuat Drive Yards and Sienar Fleet Systems. What sets CEC apart from its competitors is that it has never had to rely on military contracts, but thrived by concentrating on civilian sales. It is a testament to its corporate success that some of the best-known freelance ships in the galaxy – including the *Millennium Falcon*, *Outrider*, and *Wild Karrde* – all came off CEC's production lines.

### CORELLIA'S FINEST

CEC was first established in the Corellian system thousands of years ago. The system's five habitable worlds provided ideal markets to support the



Two of the fastest and most famous smuggling vessels in history were based on modified CEC freighters – Han Solo's *Millennium Falcon* and Dash Rendar's *Outrider*, which started life as stock YT-1300 and YT-2400 models. Like all the YT series, they feature CEC's characteristic saucer-shaped hull, which both Solo and Rendar reinforced with additional armor.

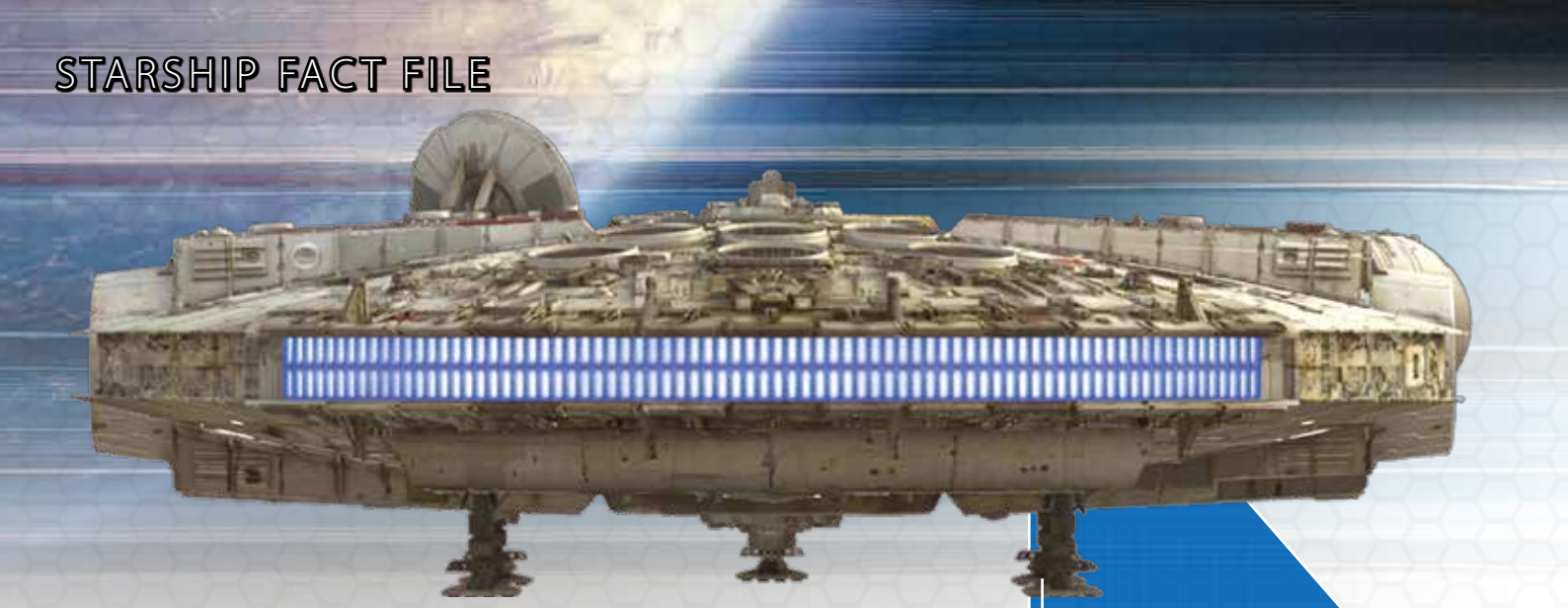





Once part of the Techno Union, CEC's own corporate logo bears a stylized rendering of the Corellian system's five inhabited worlds, collectively referred to as the Five Brothers. They include the twin planets Talus and Tralus.

**DATA FILE**

| | |
|---|---|
| PARENT ORGANIZATION | Techno Union |
| SUBSIDIARIES | Corellian Arms<br>Chempat Engineered Defenses |
| LOCATION | Corellian system |
| PRIMARY ROLE(S) | Shipbuilding organization |
| MAJOR PRODUCTS | Numerous civilian and military starships; various commercial vehicles |



corporation's first few cycles of growth, and by concentrating its efforts there first of all, CEC was able to establish itself before reaching out into other areas of the galaxy. The Corellian system provided another benefit, as many of the best engineers, shipwrights, and designers in the galaxy originated from the region, and CEC was able to cherry-pick the best of them.

## SMUGGLING VESSELS

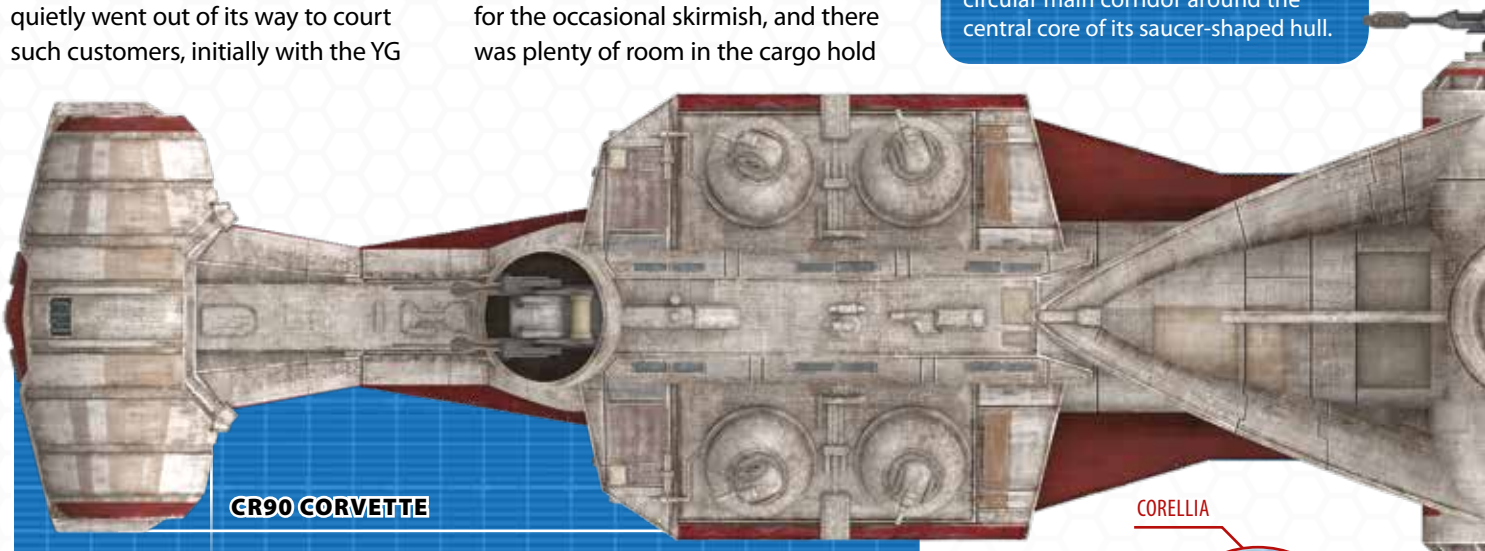
Early in its history, CEC became the manufacturer of choice for smugglers, who appreciated the way that its modular freighters could be upgraded for combat with legal or illegal after-market additions. Over the years, CEC quietly went out of its way to court such customers, initially with the YG series of light freighters, manufactured centuries before the Battle of Yavin.

In later years, CEC's new YT-class of freighters became particularly popular in smuggling circles. Disgusted by the high tariffs the Empire placed on galactic trade, CEC was quite willing to help those individuals who wished to circumvent these taxes. The most famous smuggling ship, the *Millennium Falcon*, was originally a stock YT-1300 freighter to which its many owners had added souped-up engines and military-grade weapons.

By the time the later YT-2400 began coming off the production lines, CEC was beginning to target the smuggling market more openly. The basic model came ready fitted with armor-plating for the occasional skirmish, and there was plenty of room in the cargo hold

### THE YT-1300 LIGHT FREIGHTER

The first YT-series ship was developed by CEC's engineers with – somewhat surprisingly – input from Narro Sienar, boss of rival company Santhe/Sienar Technologies. The YT-1000 became one of the most popular space transports of its era, and CEC revolutionized interstellar shipping with its innovative use of modular design. Large sections of the ships could be mass-produced and reconfigured as needed without extensive retooling. This saving allowed the YT series to be marketed at extremely competitive prices, while owners could easily customize the ships to suit their needs. Building on the success of the YT-1000, YT-1200, and YT-1210, the YT-1300 model exemplified this concept with a circular main corridor around the central core of its saucer-shaped hull.



### CR90 CORVETTE

The CR90 enhanced CEC's reputation as something of a rogue manufacturer. With so many in operation throughout the galaxy, it was ideal for clandestine work. The Rebel Alliance used a number of these Corvettes (most famously Princess Leia Organa's *Tantive IV*) for covert missions, as it was almost impossible for the Empire to determine which ships were legitimate.

CORELLIA



**Established in the Corellian system millennia before the Battle of Yavin, the CEC has always been based there, enjoying a vast pool of local engineering talent.**

## THE MANDALORIAN WARS

### THE EBON HAWK – FORERUNNER OF THE FALCON

Four thousand years ago, the *Dynamic*-class light freighters built by the "Founding Shipwright" company Core Galaxy Systems operated around the galaxy. Their venerable design was so classically right that its echoes inspired the layout of CEC's light freighters eons later. One descendant was the *Millennium Falcon*, whose career had some uncanny parallels with the famed *Ebon Hawk*, which took part in the Mandalorian Wars in 3976-3960 BBY. Roughly semicircular with forward projections, the *Dynamic* class was designed to accommodate a paying cargo, a small crew, and other equipment, such as a swoop bike. In the case of the *Ebon Hawk*, that cargo was generally contraband, as her owners, who included the criminal Exchange organization, made a living smuggling spice and illicit goods. Heavily customized and retrofitted with a Class 1 hyperdrive, the *Hawk* was rumored to be the fastest ship in the galaxy.



**The *Ebon Hawk* was a *Dynamic*-class freighter, echoes of whose design appeared thousands of years later in CEC's YT-series. Like the *Millennium Falcon*, she was heavily modified for smuggling, and even spent a period running contraband to Tatooine (above). The *Hawk* took part in many battles of the Jedi Civil War and the Mandalorian Wars that followed.**

for a major upgrade of its weapons and engines. Indeed, the CEC management was so aware of the use to which these ships were going to be put, that their description of it as a "stock cargo hauler" became something of a running joke in the industry.

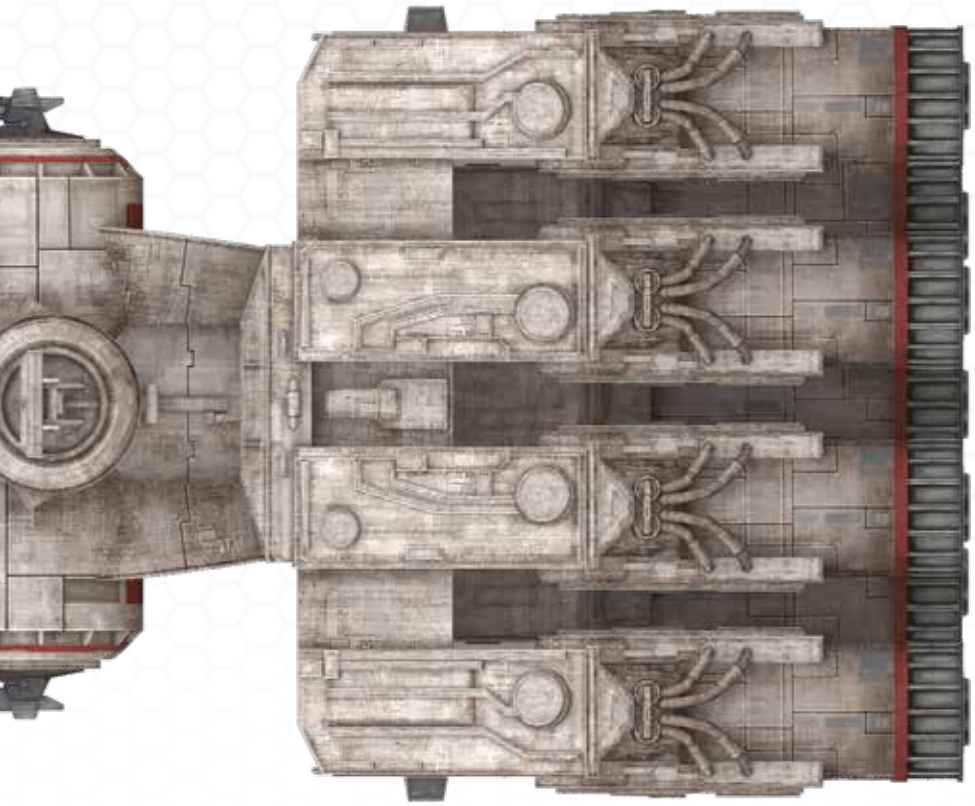
**_Wild Karrde_, smuggler Talon Karrde's mobile base, began life as a CEC _Action VI_ bulk freighter. This ponderous and ungainly transporter gained three heavy turbolasers, deflector shields, and a larger power source while the hull was reinforced with massive durasteel plates.**



### TAKING SIDES

Its high-profile ships apart, it is important not to underestimate the vast number of CEC ships that ply an honest trade almost unnoticed, keeping the economy of the galaxy turning over. The manufacturing capability of the organization is vast, and goes far beyond its freighters.

CEC's CR90 Corvette is a very different kind of vessel, used widely throughout the galaxy. Boasting a modular design, the Corvette is able to fulfill a variety of different purposes. At various times, it has been used as a passenger liner, military ship, and cargo vessel. The CR90 is an example of how audacious design and clever marketing enabled CEC to carve a sizable niche in the galactic economy.



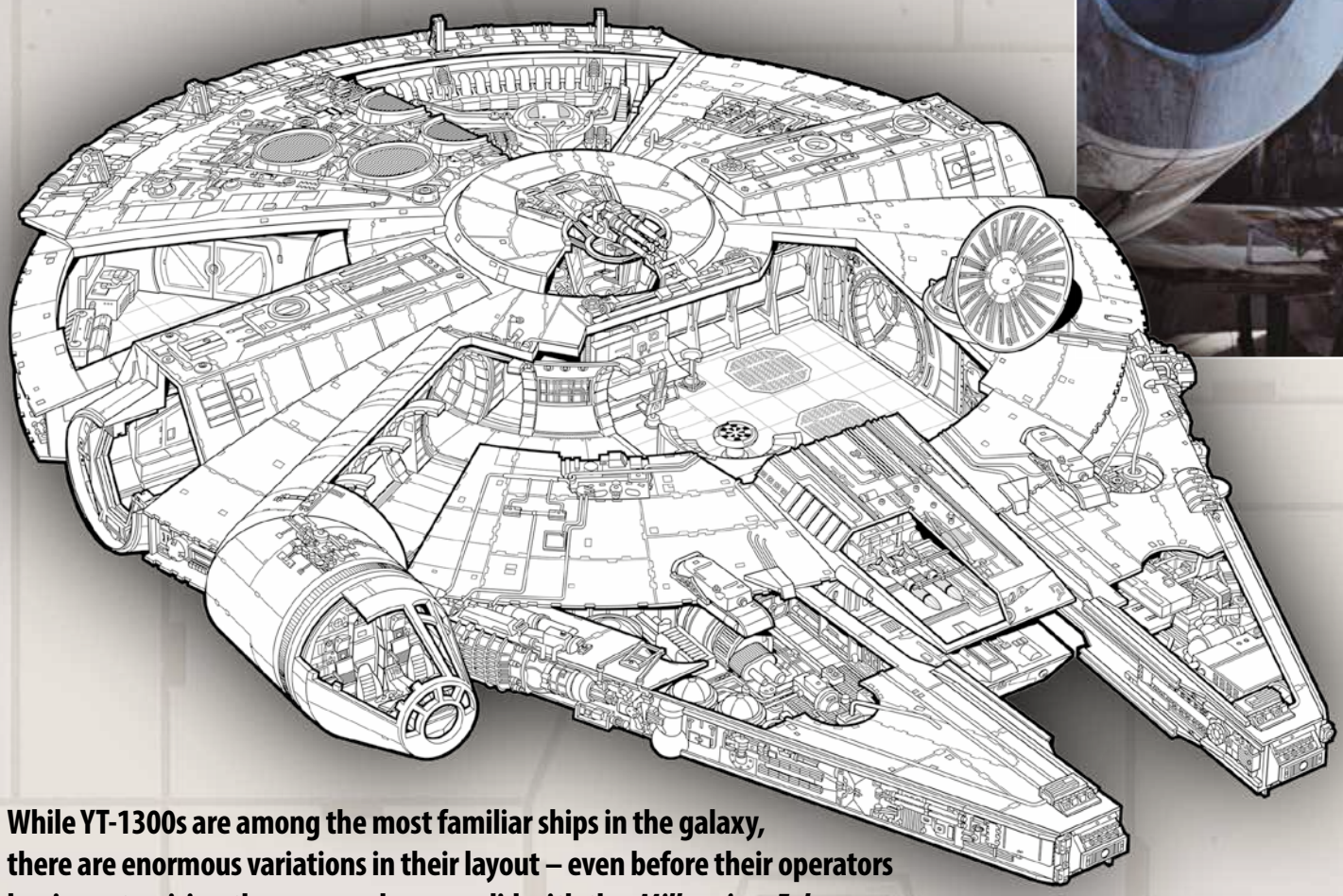
### CORELLIA

"Corellia" came into existence in 1977 when Lucasfilm set out to provide Han Solo with a background story. George Lucas had originally called Han's homeworld "Crell." This was described as a forbidding, gaseous world with cities floating in the clouds – an idea later used as the basis for Bespin in Episode V. In the canceled novel *Alien Exodus*, Corellia was to have been named after Antonia Corelli, pilot of a 25th-century spacecraft from Earth. When this ship is displaced by a wormhole to another galaxy and time, its passengers and crew become the first humans in the *Star Wars* universe.

BEHIND THE SCENES

# MODULAR CONFIGURATION





**While YT-1300s are among the most familiar ships in the galaxy, there are enormous variations in their layout – even before their operators begin customising them, as each owner did with the *Millennium Falcon*.**

Although it is often called a 'stock' light freighter, the YT 1300 is a modular design, based on mass-produced sections that can be configured in many different ways for different roles. The only common elements are that each YT-1300 variant has a saucer-shaped main hull with a central core on which the turret for the ship's laser cannon is mounted, and a circular main corridor running around it.

The core houses a central passage tube that runs between the circular transparisteel observation windows in the ventral and dorsal hulls. Built-in gravity compensators allow passengers to move freely from one window to another without any disorientation between 'up' and 'down'.

## CUSTOM CONFIGURATIONS

All YT-1300 variants include forward-projecting mandibles and port and starboard access corridors leading to various configurations of docking rings, loading ramps or airlocks, but beyond these basics, nothing is fixed. To configure the rest of the ship, the Corellian Engineering Corporation developed a range of different modular compartments that fit around the corridor to make up the rest of the disc of the main hull, like slices of pie. These modules include the engine bay, cargo holds, and crew's quarters, which can be arranged in many configurations to suit the customer's requirements.

The first requirement is to fit a cockpit, and CEC offers several alternatives. Most customers opt for a starboard-mounted offset cockpit, which also requires an additional access tube fitted radially across the hull to provide access to the center corridor. However, this type of cockpit can be fitted to other positions on the hull, and it is not uncommon to see it offset to port.



Although successive owners had modified the ship many times both inside and out, at its heart, the *Millennium Falcon* remained a YT-1300fp, which CEC configured with modules designed to carry a mixed payload of freight and passengers.

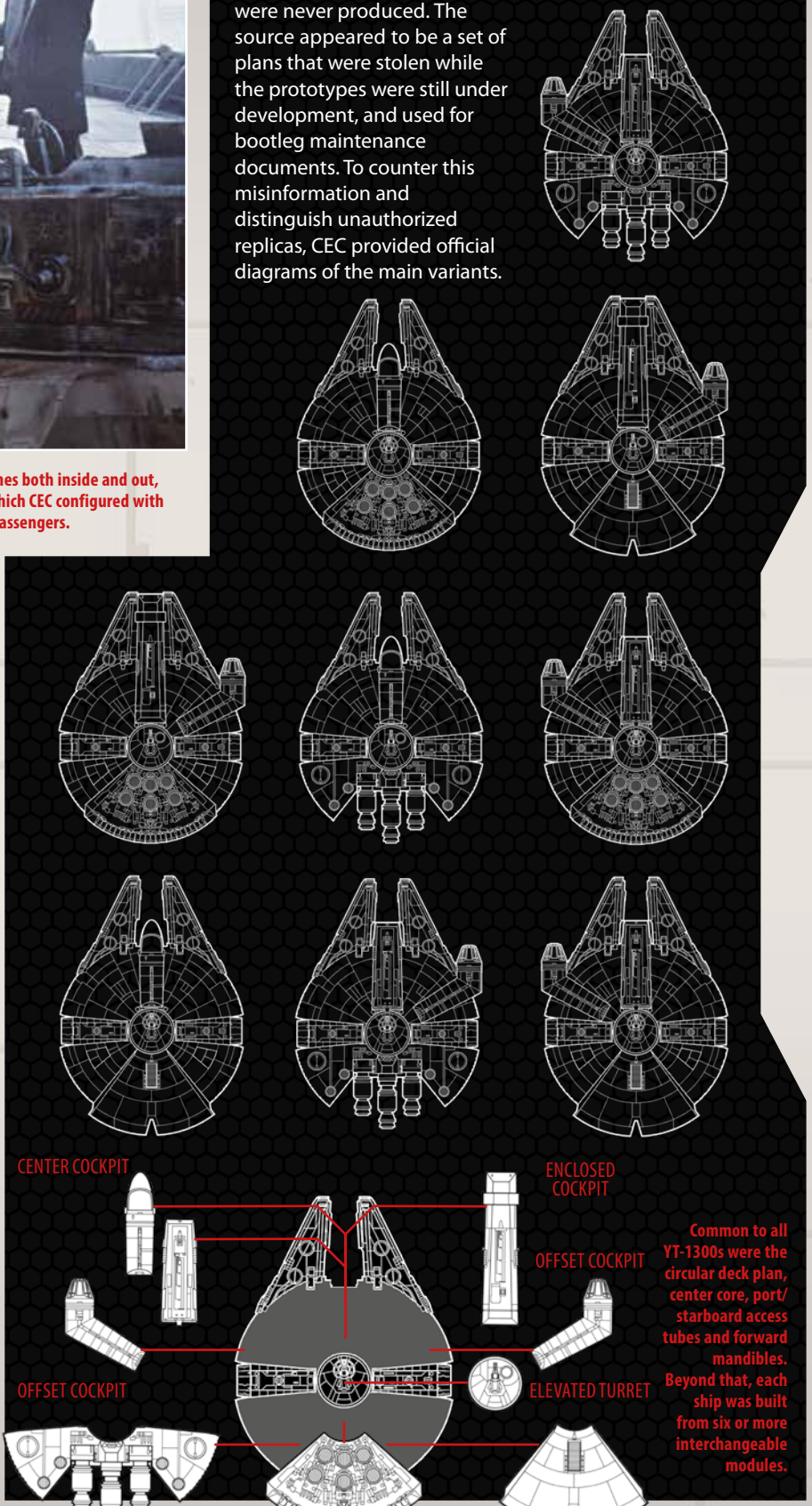
Many pilots prefer the symmetry of a central control station, and their needs are catered for by an alternative cockpit that slots into the main disc between the mandibles – although this naturally reduces the space available inside the ship. For operators who require the security of a fully armored ship, there is even an option for a fully enclosed 'embedded' control station, housed entirely within the hull and invisible from outside. Only a limited number of customers choose this type, as it means piloting the ship blind, and becoming totally reliant on sensors.

## ENGINE MODULES

The YT1300 introduced a new style of power unit to CEC's range. Known as the 'wide bar' design, the engine bay forms a 90° slice of the main disc, with the array of sublight thrusters running right round the perimeter to give it the 'wide bar' name. This arrangement generates greater thrust from the Quadex power core, and its multiple steering flaps offer unprecedented maneuverability. A Class 2.0 Corellian Avatar-10 hyperdrive and Class 12 backup hyperdrive are housed within the quadrant, offset to port. The wide

## OFFICIAL VARIANTS

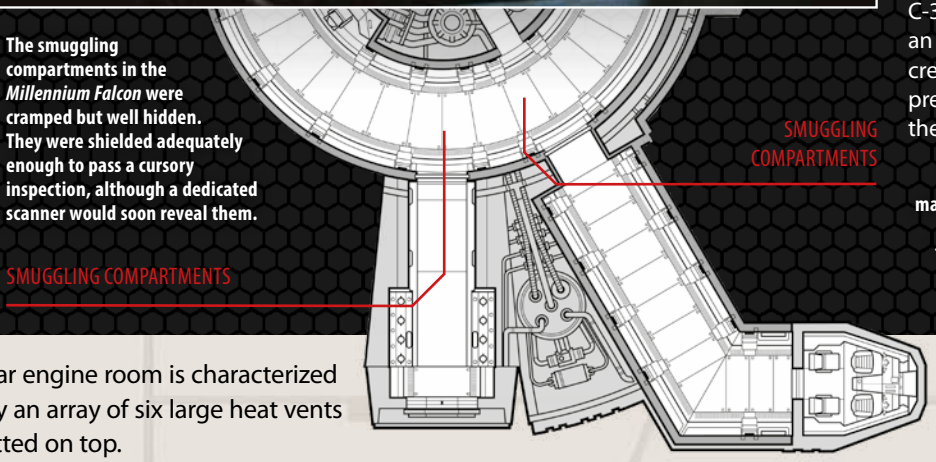
Although the modular design of the YT-1300 allowed for a wide range of alternative layouts, it was discovered that some sets of maintenance schematics showed configurations that were never produced. The source appeared to be a set of plans that were stolen while the prototypes were still under development, and used for bootleg maintenance documents. To counter this misinformation and distinguish unauthorized replicas, CEC provided official diagrams of the main variants.




Common to all YT-1300s were the circular deck plan, center core, port/starboard access tubes and forward mandibles. Beyond that, each ship was built from six or more interchangeable modules.



The smuggling compartments in the *Millennium Falcon* were cramped but well hidden. They were shielded adequately enough to pass a cursory inspection, although a dedicated scanner would soon reveal them.




## SMUGGLING COMPARTMENTS

Although the layout of the YT-1300 is much more straightforward than the labyrinthine interiors of many other starships, there were still many hidden, hollow spaces that could be adapted to hide contraband from customs searches. It was fortunate that the *Millennium Falcon* had been fitted with smuggling compartments large enough to conceal Han Solo, Chewbacca, Luke Skywalker, C-3PO, R2-D2, and Obi-Wan Kenobi from an Imperial search, although a scanner crew that would have revealed their presence was later sent aboard, forcing the rebels to take more drastic action.

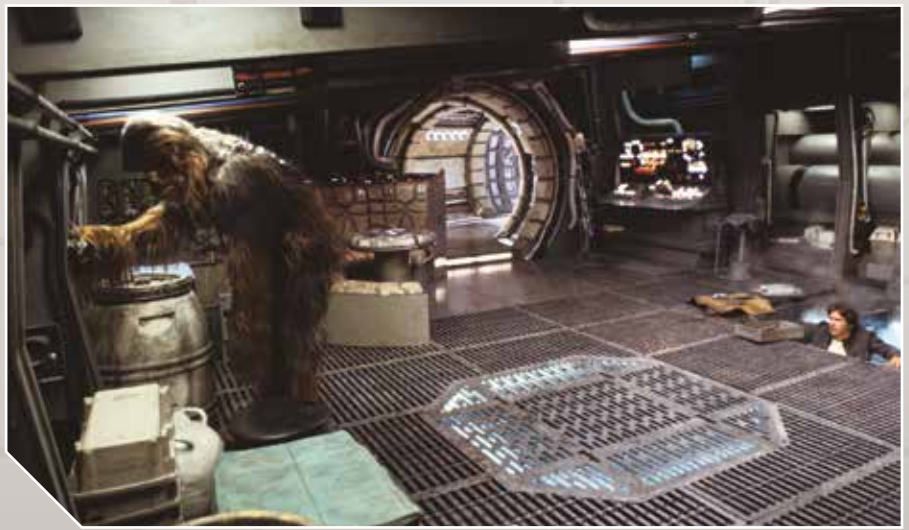
Han Solo had used the voids under the YT-1300's main corridor to carry contraband on more than one occasion. While he never expected he would use them himself, their location between the loading ramp and cockpit access corridor proved to be a happy accident.

bar engine room is characterized by an array of six large heat vents fitted on top.

Some of CEC's more conservative users preferred the traditional engine arrangement used in earlier variants of the YT-series, which were fitted with two or three conventional cylindrical thruster units. To keep these customers' business, CEC offered a YT-1300 variant with three thrusters fitted into an open framework that filled the rear quadrant, although this arrangement could only be fitted as a module that occupied the whole rear half of the ship. There is also a variant for armored ships, which encloses the rear quarter in additional plates, with only the thrusters' outlet nozzles visible from outside.

### CARGO HOLDS

When the YT-1300 is configured for maximum payload, it can be equipped with a main hold, fore cargo hold, and freight loading room, plus two additional cargo modules fitted on either side of the engineering bay. These have a total capacity of 100 tonnes. While it is illegal to operate a ship with cargo stowed in passage tubes, pilots have been known to do so to speed up the unloading process. Cargo is normally handled with freight-loading arms and a tractor beam projector built into the mandibles (connecting with the forward freight loading room), plus a rear hydraulic freight elevator.

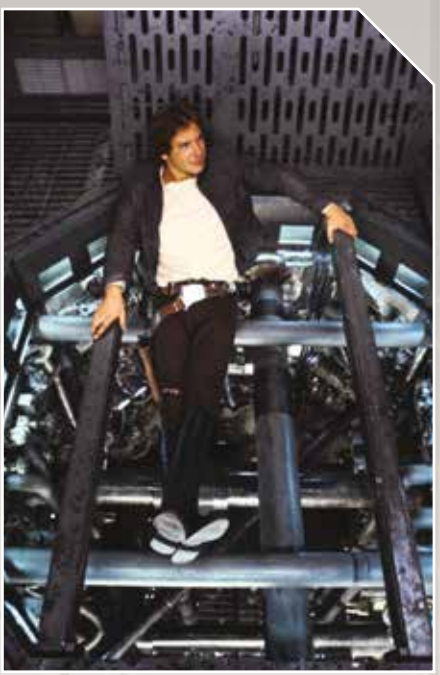


The main hold of the YT-1300fp was configured to store freight as well as providing living space for the crew and passengers. As it also contained the engineering station and key maintenance access grids, wise captains were careful how they stowed cargo in this vital area.

### PASSENGER MODULES

Even a utilitarian freighter needs quarters for the crew, and the YT-1300's minimum crew is a pilot and co-pilot. Their standard accommodation is simply a corner of the main hold, which has two built-in bunks and a basic washroom – although the area can be reconfigured with modular convertible furniture to suit the needs of crew members with non-human physiology.

To maximize its market, CEC also wanted to attract operators who needed an affordable, tough and



Whether the modules were designed to house passengers or cargo, the space around the open voids was packed with the ducts, hydraulic, electrical and mechanical systems that kept the ship operational.

versatile passenger ship, so it offered modules that replace the majority of the cargo holds with three passenger cabins. In this set-up, the crew's bunks are installed in the engineering bay. Although the cargo capacity is cut to a maximum of 25 tonnes (stored in a small hold off the freight loading room), there is space for between nine and 15 passengers, in addition to the two crew – depending on the level of comfort offered. The basic arrangement has three bunks in each cabin, plus a small en-suite washroom, but there are conversion kits that allow an extra two bunks to be fitted per cabin.

## KEY VARIANTS

Certain configurations proved more popular than others. Two that were initially produced in large numbers were the freight (YT-1300f) and passenger (YT-1300p) versions, but a more versatile hybrid designed to carry a mixed payload of freight and passengers (YT-1300fp) went on to become the most familiar version of the ship and the basis of the *Millennium Falcon*. The detailed differences between these key layouts is covered in later articles.

## OVERALL DIMENSIONS

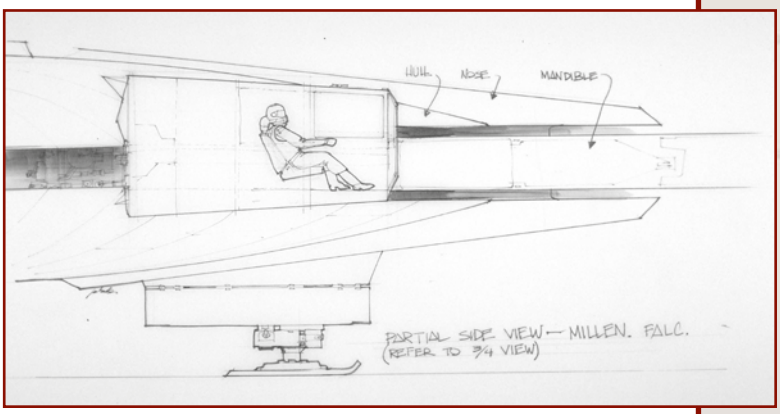
The limitations faced by the team which made the original *Star Wars* trilogy meant that they sometimes had to use creative license to depict the ship, and this led to a confusion over the size of the *Falcon*. The studio interior sets that were built for Episode IV and Episode V simply could not fit comfortably inside the exterior dimensions of the ship defined by the ILM models – let alone the 'full-sized' *Falcon* exterior built for *The Empire Strikes Back*, which was only about 75-80 per cent of the size of a scaled-up version of the ILM miniatures.

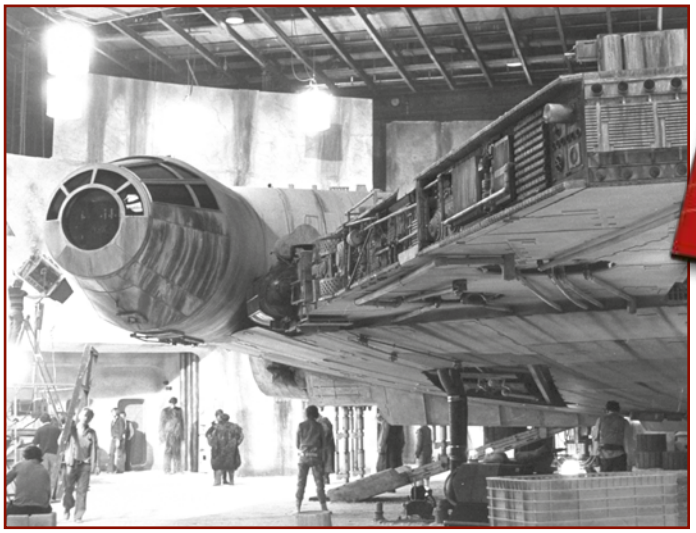
For years after the movies were made, the *Falcon*'s official length was said to be 87.6 feet (26.7m), and this dimension was used in one of the earliest attempts to map the *Falcon*'s interior in *The Star Wars Sourcebook* by West End Games (1987). Based on set drawings and a certain amount of imaginative interpretation, the design became the blueprint for most YT-1300 freighters for years.

In time, it became clear that these plans did not hold up to scrutiny, and when a new, more detailed blueprint came to be drawn up, the impossibilities became obvious. Illustrators Chris Reiff and Chris Trevas used a 1976 scale illustration by visual effects art director Joe Johnston as a foundation, and compared it with the dimensions of X- and Y-wing fighters to get a length measurement of about 110 feet (33.5 meters). When they drew the plans up in more detail, the exact length came out to 113.8 feet, but this was adjusted to 114 feet (34.74m) to stop it appearing to be a coded reference to the movie *THX 1138* (which might suggest the dimension was not serious).

A variety of other dimensions have been used, and the most recently accepted length is now 34.37m. To help to explain the confusion, the story went round that CEC had made a mistake in the official declaration of the ship's specifications, understating its length. Various explanations were offered, including a straightforward clerical error. Other theories were that the length had been quoted without allowing for the forward mandibles, or that it was a deliberate ploy to confuse CEC's competition.

The original plans for the *Millennium Falcon* (right) were drawn up in haste, and there was no time to ensure that the sets and models built for the first movie were completely consistent.






Ever since the movies generated spin-off publications (above), there have been attempts to reconcile the differences between the ship's dimensions.

# YOUR NEXT PARTS

## COMPONENTS CHECKLIST

1. Cockpit bulkhead lighting panel
2. Fixing screw (x 1, plus spare)
3. Right instrument panel
4. Left instrument panel
5. Passage tube upper section
6. Passage tube lower section

**This issue brings you a selection of parts for your model *Millennium Falcon*, including the first electronic component – the cockpit bulkhead lighting panel. You also have more cockpit details, plus sections of the exterior.**

The parts you have received with this issue mean that the interior of the cockpit is nearly complete, including the light that illuminates it from behind. You also have the two halves of the passage tube to link the cockpit to the hull, and will shortly be able to start assembling the exterior of the cockpit.

## WHERE THE PARTS FIT

### LIGHTING PANEL




Part 1, the instrument lighting panel, is an electronic circuit board fitted with six LEDs that shine through holes in the cockpit bulkhead.




### INSTRUMENTS

Parts 3 and 4 are the instrument panels that are installed to right and left of the pilot and co-pilot.




### HULL EXTERIOR

Parts 5 and 6 form the passage tube that connects the offset cockpit to the rest of the hull.

# FITTING THE LIGHTING PANEL

The lighting panel is provided as a printed circuit complete with a series of LEDs positioned so that they shine through the apertures in the bulkhead and illuminate the instruments. It has a socket for a long electrical lead that will plug into the internal wiring at a later stage of the assembly.



You can choose whether to fit the instrument lights now or wait until later. The panel is simply screwed to the back of the cockpit bulkhead, so once you have fitted the instrument panel sticker, the lighting can be added at any point. As the circuit board needs to be connected to its lead, you may find it easier not to attach it until you are ready to finish off the cockpit and attach it to the passage tube (shown on page 13).

**The lighting panel has six LEDs which glow when connected to a battery. You will receive the battery box and lead for testing the lights with Issue 9.**

01



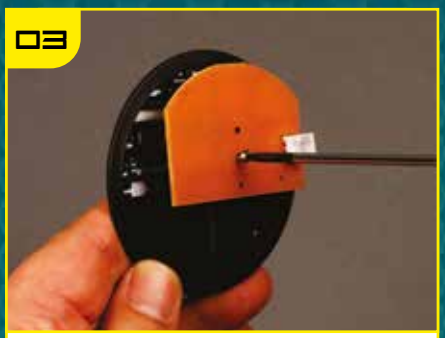
Take the cockpit bulkhead that you have been working on, together with Part 1, the lighting panel supplied this time.

02



Align the lighting panel with the back of the cockpit bulkhead as shown, with the LEDs facing the bulkhead.

03



The lighting panel is secured with a single screw inserted through the hole in the panel into the socket on the bulkhead.

# FITTING THE COCKPIT INSTRUMENTS

Two auxiliary instrument panels are fitted below the cockpit windows, to the left and right of the ship's crew. You can plug these two molded parts into slots in the cockpit base, but do not glue them until you are ready to complete the assembly.

**We will be providing information for modelers who want to enhance the appearance of these panels by picking out some of the details in color.**

01



Take the two instrument panels (Parts 3 and 4) and identify which is left and which is right.

02



Push-fit the tabs on the bottoms of both panels into the matching slots in the cockpit base.



# ASSEMBLING THE PASSAGE TUBE

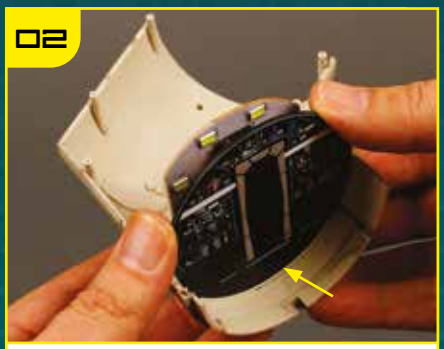
The passage leading from the cockpit to the hull is supplied in two halves which form the upper and lower sections of an angled tube. You can fit these parts together temporarily to see how they will join onto the outer shell of the cockpit, but do not glue the assembly.

01



The lower half of the tube has nine molded pins which fit into nine matching sockets in the top.

02



The cockpit bulkhead will fit into this molded groove in the passage tube, but do not attempt to fix it in place yet.

03



You can fit the two halves together and gently press the pins into the sockets to form the tube, but **these parts must not be glued together**.

BEHIND THE SCENES

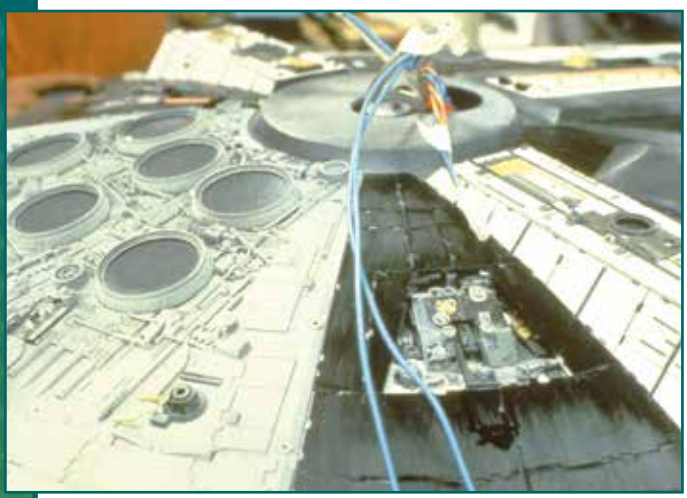
## MOVIE LIGHTING EFFECTS

The introduction of high-intensity LEDs has transformed modern lighting, but this technology was not available at the time the original trilogy was made.

The earliest LEDs appeared in 1962, but only emitted low-intensity infrared light. They were often used as indicator lamps for electronic devices and as seven-segment numeric displays. The first visible-light LEDs were introduced in the 1980s and were also low intensity, and limited to red.

Filming required bright lights, so the *Star Wars* prop model makers were forced to use the technology of the time – neon, tungsten, and halogen bulbs. For the high-intensity glow of the engines of the Rebel Blockade Runner and the *Falcon*, this meant using halogen lights, with aluminum shields to protect the plastic parts of the models from the high temperatures.





**The high-intensity lights of the models used for *The Empire Strikes Back* were provided by halogen bulbs. To dissipate the heat from the *Falcon*'s 'engines', the six vents (left) had real grilles fitted with miniature fans. The myriad pinpoint lights of the mighty Star Destroyer (above) came from a central source, from which clusters of fiber optic cables led to holes in the hull.**

It was even more complicated to simulate the thousands of lights visible on the mile-long Star Destroyer. These were also generated by a halogen source, housed in an aluminum heat shield and equipped with a cooling system powered by compressed air. From this central point, bundles of fiber optic cables carried spots of light to holes in the outer surface of the hull. On one occasion when a camera crew forgot to turn on the cooling system, the heat melted the fiber optics, which could fortunately be repaired by ILM modeler Paul Huston.