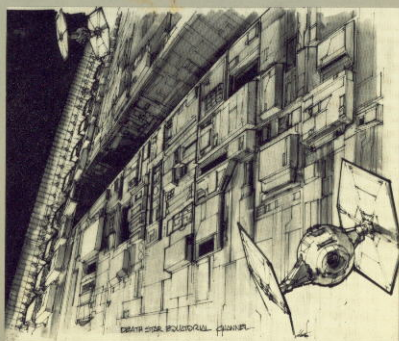
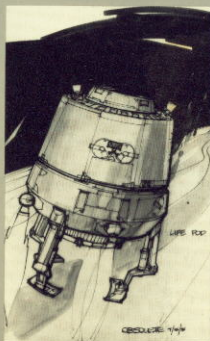
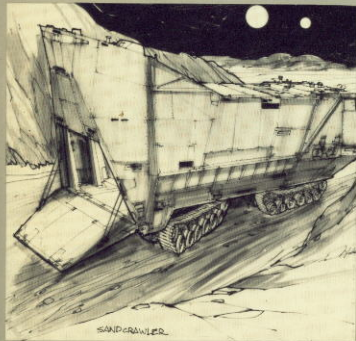


THE ORIGINAL DRAWINGS FOR THE GREATEST SPACE FANTASY EVER MADE!

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THE STAR WARS SKETCHBOOK



JOE JOHNSTON

8002
2-Film
ARE

THE
**STAR
WARS**TM
SKETCHBOOK
BY
JOE JOHNSTON

BALLANTINE BOOKS • NEW YORK

INTRODUCTION

Joe Johnston, who is responsible for these sketches of STAR WARS spacecraft models, was initially hired as a storyboard artist in August 1975. In preparing storyboards of the climactic space battle above the Death Star, Johnston drew and re-drew the X-wing fighters, TIE fighters and other spacecraft which were the primary visuals for that sequence. He was then asked to do the sketches which would serve as a guide to the model builders.

Earlier, Colin Cantwell, who did much of the model work on *2001*, had been hired to build a series of prototype models. The Cantwell models were beautifully done and served as a good foundation for several of the ships. As the script was altered, director George Lucas decided that new spacecraft were necessary. Johnston, after discussions with Lucas and Special Photographic Effects Supervisor John Dykstra, produced the sketches for the Corellian pirateship and the Life Pod.

Johnston based his rendition of the Sandcrawler, which is the only landbound vehicle in this collection, on one created by Ralph McQuarrie for a series of production paintings. Johnston then elaborated on all of the vehicles, adding detailing which brought a certain reality to them.

Steve Gawley was given the task of translating Johnston's sketches into workable draftings from which the model shop, under the direction of Grant McCune, would build the required total seventy-five models required for the film.

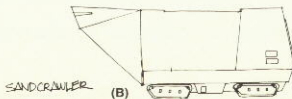
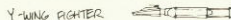
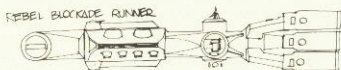
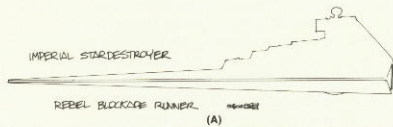
As the film went into production and the ships began to take solid form, all of the designs underwent changes. John Dykstra might insist, for example, that an antenna was too thin to photograph properly or a wing support had to be thickened to prevent vibration. All of these considerations would be reflected in the final designs.

As soon as models were completed and approved, they were photographed from all angles. These photographs were sent to John Barry, the set designer, who supervised their full-scale construction at the EMI Studios in London.

Parallels can be found between STAR WARS and Lucas' earlier film, *American Graffiti*,

in the close relationships of characters to their vehicles. "A bit of that comes through in STAR WARS," comments Johnston, "especially in Han Solo's ship. The Corellian pirateship is a highly modified freighter. George wanted it to look like it was souped-up and the body was stripped down to make it faster. It was a big smuggler's hot-rod space-freighter." As Johnston might add, quoting Han Solo, "and I made a few modifications myself."

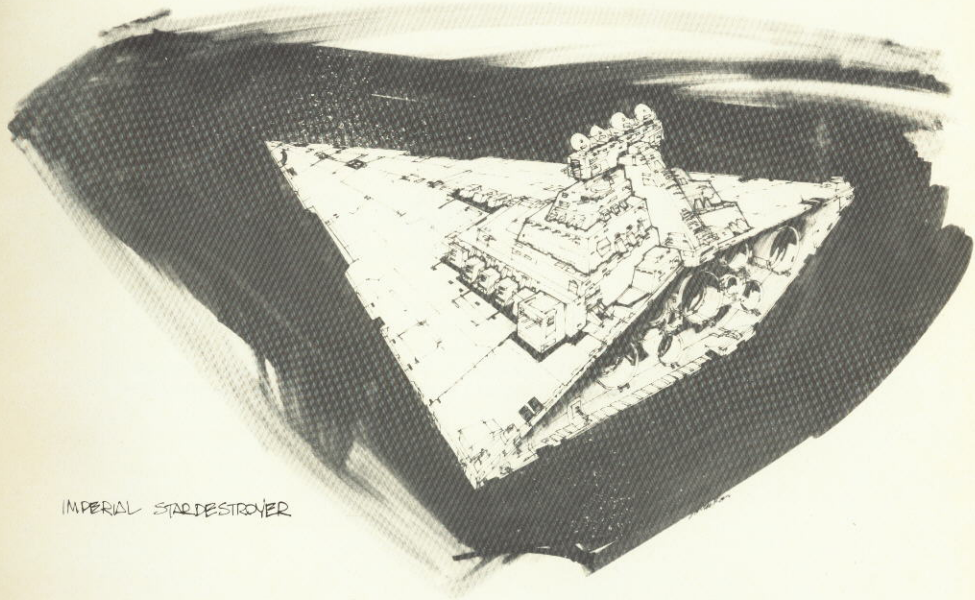
CAROL WIKARSKA
DIRECTOR OF PUBLICATIONS
STAR WARS



This schematic diagram shows (A) the size of the Rebel Blockade Runner in relation to the Imperial Star Destroyer; and (B) the sizes of the Sandcrawler, the Millennium Falcon, the X-wing fighter, the Y-wing fighter, and the TIE fighter in relation to the Rebel Blockade Runner.

IMPERIAL STAR DESTROYER

The Star Destroyer is the Empire's top-of-the-line in mobile fighting ships. Heavily armored and bristling with guns, the Star Destroyer is a floating fortress. This is essentially Colin Cantwell's concept, but the scale of the final version is several times the size of the prototype. The Star Destroyer is the most minutely detailed of all the ships. It is covered in tiny plates, many no larger than 1/16" square and .020" in thickness. The Star Destroyer was built largely from one sketch, time prohibiting any working drawings.

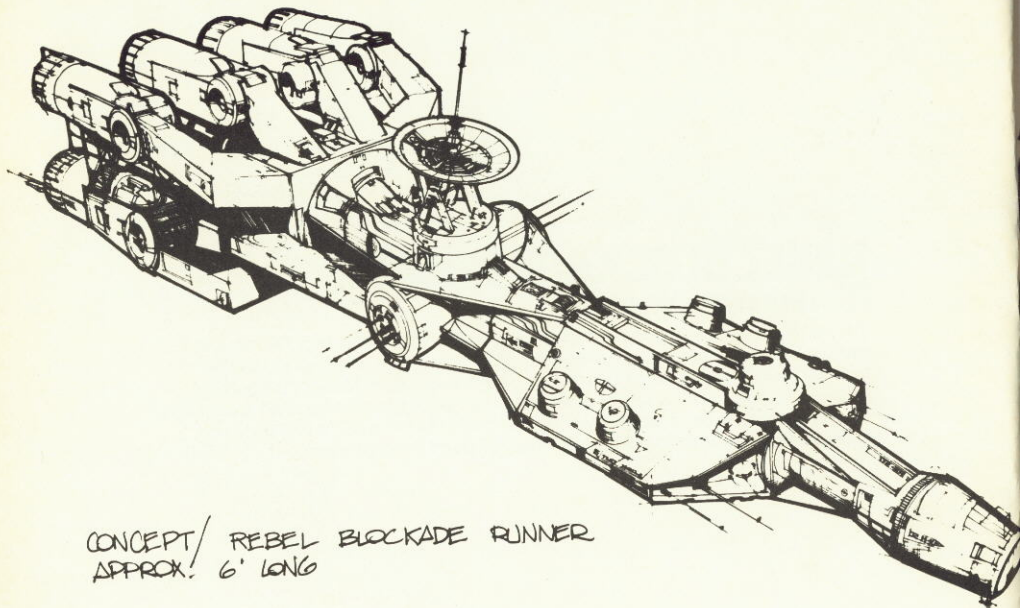


IMPERIAL STAR DESTROYER

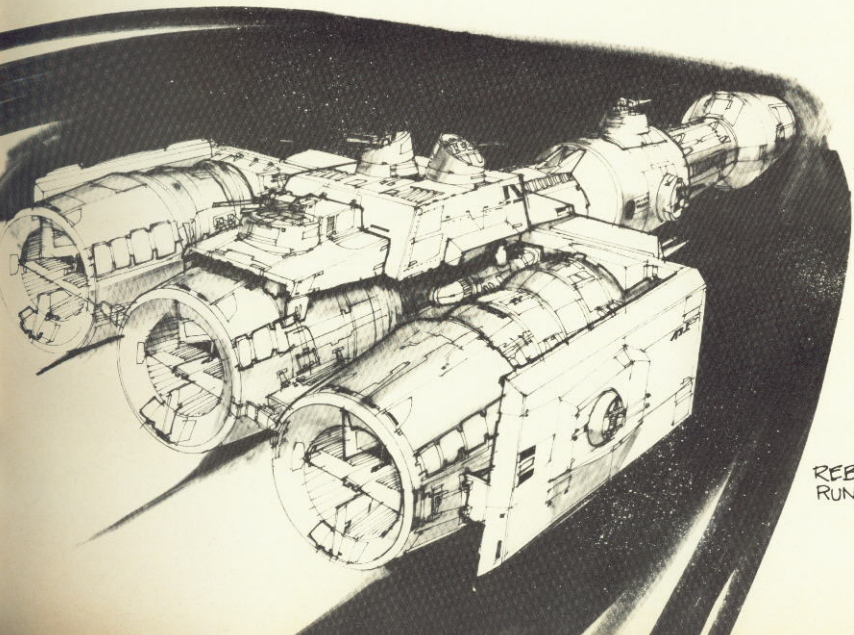
REBEL BLOCKADE RUNNER

(The Princess' Starship)

The Rebel Blockade Runner was originally the pirateship or *Millennium Falcon*, until it was decided that a more unique shape should be used for the ship featured as Han Solo's vehicle. The Blockade Runner is a truly antiquated craft. Multiple fuel-burning engines, Nemo-esque fins and a hammerhead cockpit suggest an era when spaceships were commissioned and handcrafted. The Blockade Runner was the first ship to be completed but was later stripped of paint and reworked for more detail.



CONCEPT / REBEL BLOCKADE RUNNER
APPROX. 6' LONG

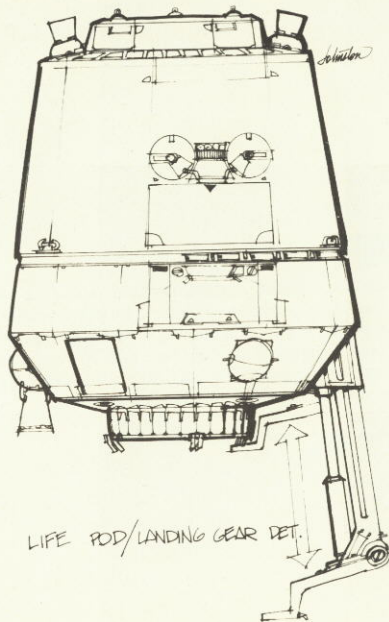


REBEL BLOCKADE
RUNNER

LIFE POD

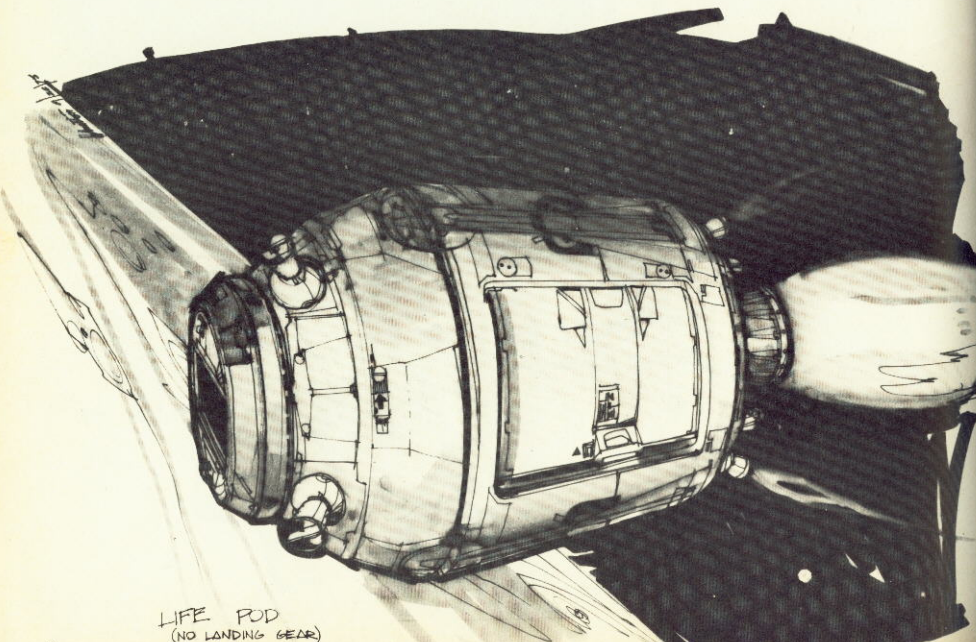
A recognizable "space capsule" appearance best suited our needs for the Life Pod. The pod was actually held suspended in a bay and dropped by electro-mechanical fingers into a net 20 feet below, while being photographed at 85 frames per second. These requirements dictated a smooth outer surface with no obstructions behind the central waist for the claws to hang upon. The back end of the pod was hollowed out and the front weighted to keep it nose-heavy and falling straight.

Page 17: Life Pod jettisoned from the Rebel Blockade Runner.

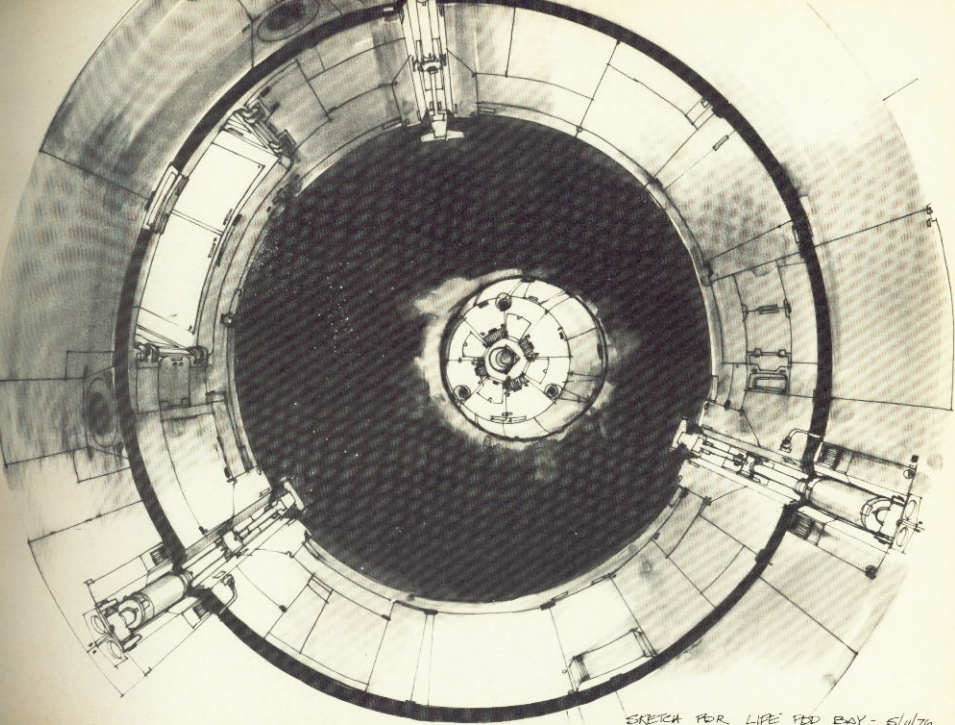


LIFE POD/LANDING GEAR DET.

OBSCURE 9/26/75



LIFE POD
(NO LANDING GEAR)

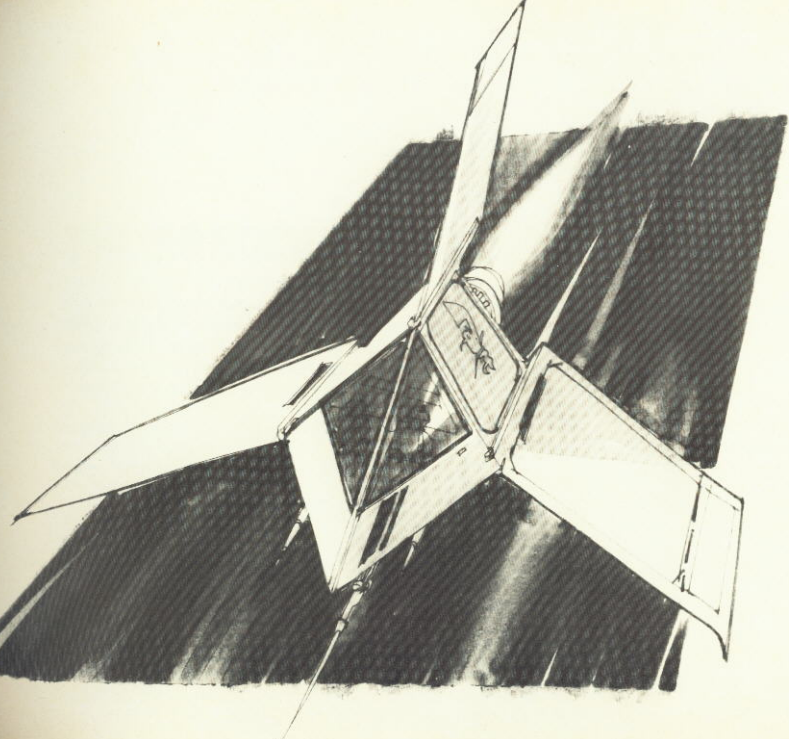


SKETCH FOR LIFE POD BAY - 6/11/70

SKYHOPPER

We get a brief glimpse of the Skyhopper in Luke's garage. Since it is partially obscured by a wall, this sketch is the first time many will see the total design. (Those who are very observant may have noted the model of the plane Luke toyed with in this scene.) It was intended to be a low-orbital spacecraft used by Luke to chase womp rats on his home planet, Tatooine. Full usage of this vehicle was made impossible by the mounting costs of the film.

If such a plane were sitting in Luke's garage, why didn't he use it, instead of the landspeeder, when searching for his missing 'droid, R2-D2? Because it was in the garage being overhauled at the time.

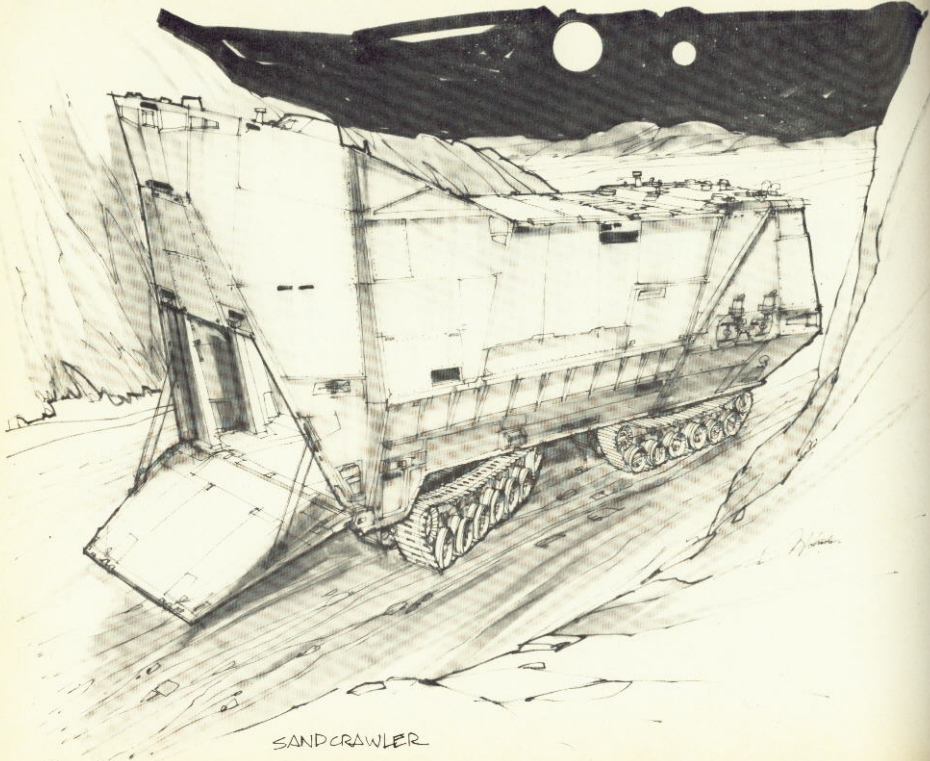


THE SANDCRAWLER

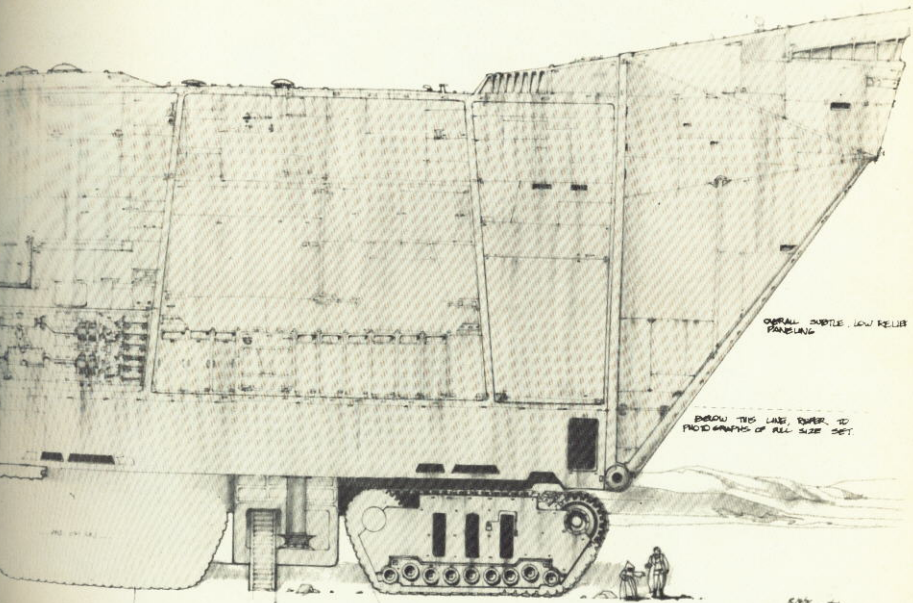
The Sandcrawler is based on Ralph McQuarrie's design. Feeling the Jawa transport should be high and awkward, lacking any form of beauty, grace or speed, in accordance with the Jawa image, we adjusted the shapes accordingly. The tread portion was designed in England and constructed full size in Tunisia. The miniatures matched the finished product perfectly. Abundant rust and the remnants of an ancient paint job completed the surface embellishment.

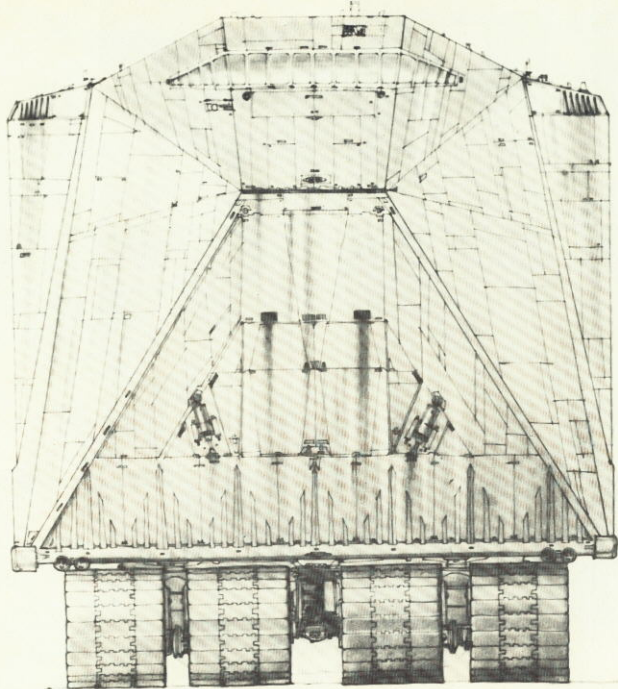
Page 24: The large door in front and steerable treads were ultimately dropped.

Pages 25-7: The Sandcrawler miniature duplicates the lower third from the full-size model on the set in Tunisia. It utilized four stepping motors and radio control.

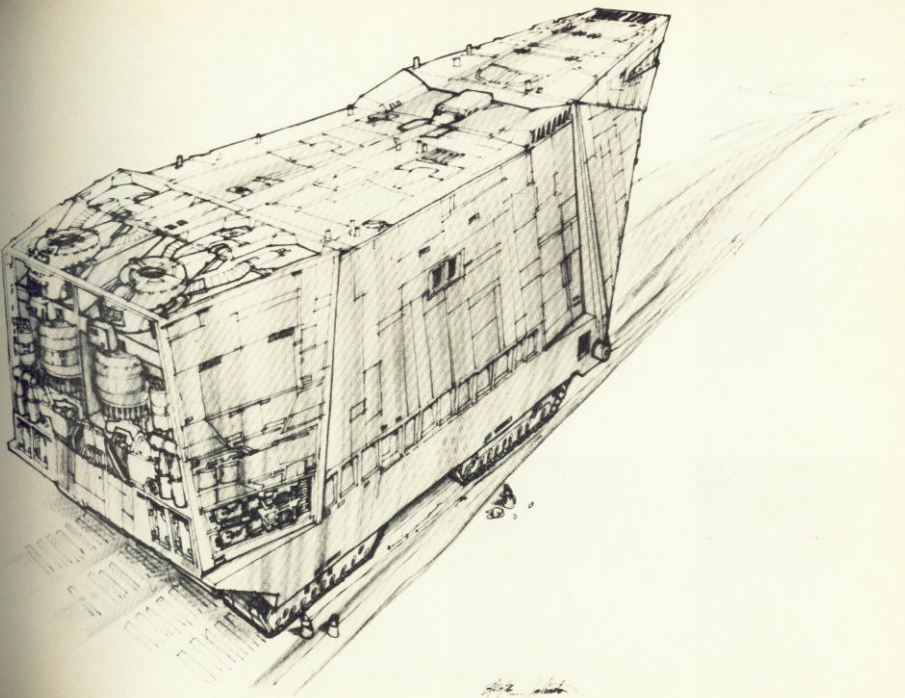


SANDCRAWLER





CONSTRUCTION (GENERAL) of the structure



THE DEATH STAR

The Death Star is essentially a man-made planet the size of a small moon. The concept of a ball in space is simple, but its components—the trench, the low altitude surfaces, the towers, the horizon pieces, the exhaust port—collectively required the most design input. There were more than ten different scales employed in all the various forms of Death Star miniatures and backgrounds. The bulk of Death Star models were derived from six modular but very different two-foot-square miniature panels that were molded in high-density foam. These pieces could be cut apart and rearranged to form endless variations of surface. The reproduction of these modules in two smaller sizes provided additional shots, seemingly from higher altitudes.

Pages 30-3: Death Star low altitude concepts.

Pages 34-7: Very early, very rough sketches for the Death Star trench. These were done before the modular mold system was conceived.

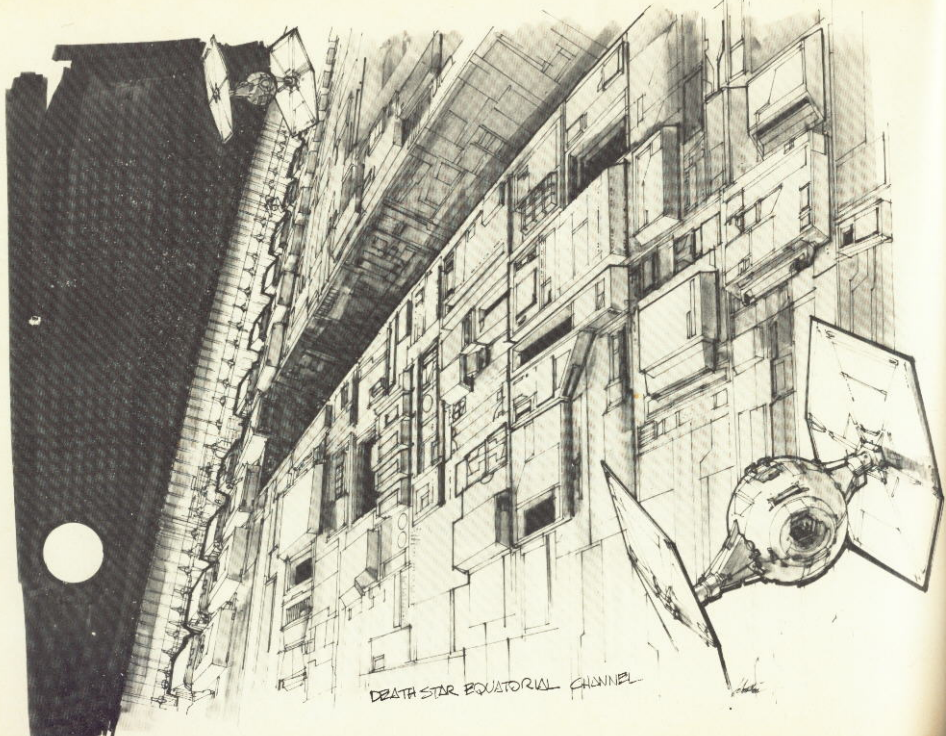
Pages 38-40: Originally, as developed in this sequence of drawings, the trench was to have gotten denser and more detailed toward the poles.

Pages 41-5: Five of the units from which all the Death Star trench and surface models were built.

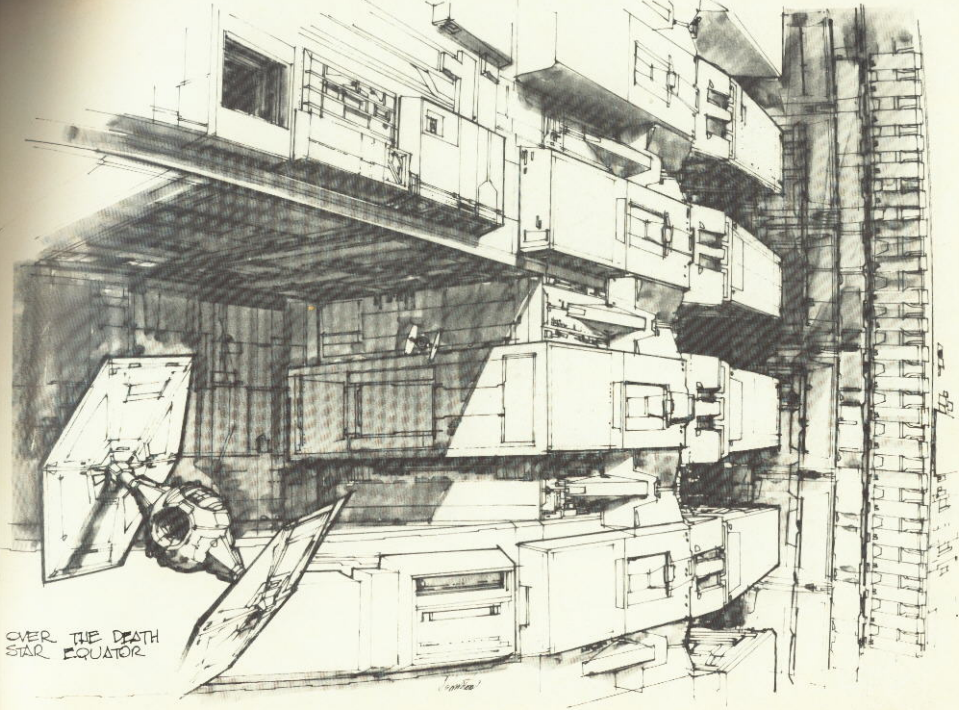
Page 46: Death Star exhaust port.

Page 47: Death Star laser cannon.

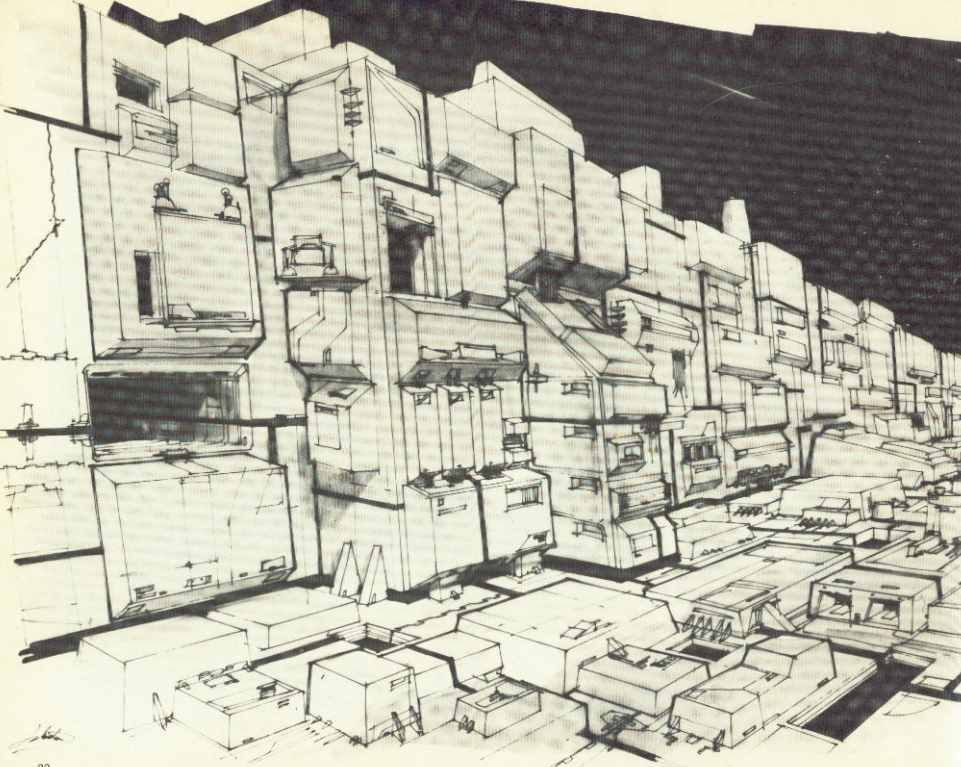
Pages 48-9: Death Star tower.

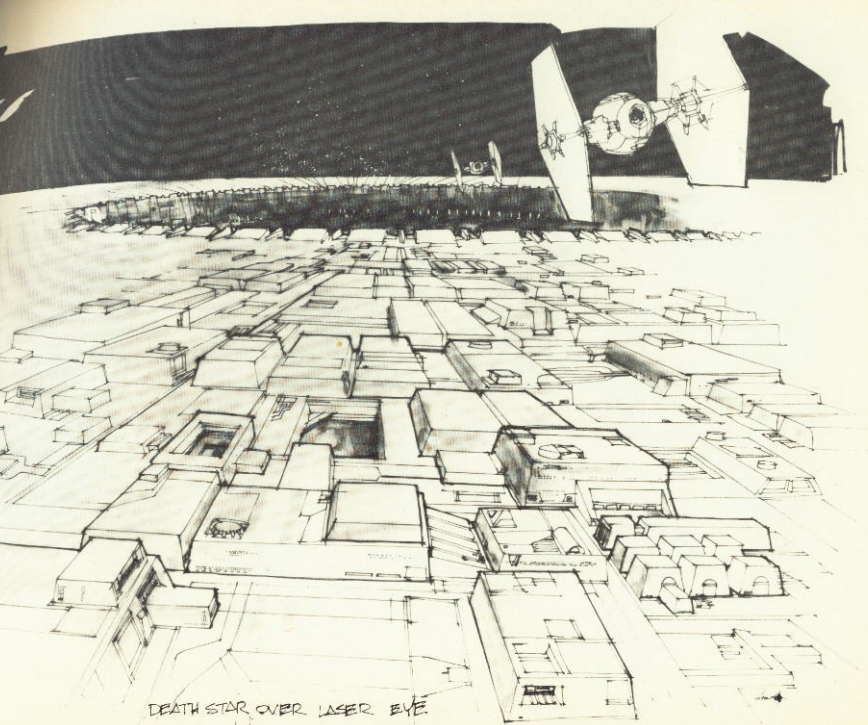


DEATH STAR EQUATORIAL CHANNEL

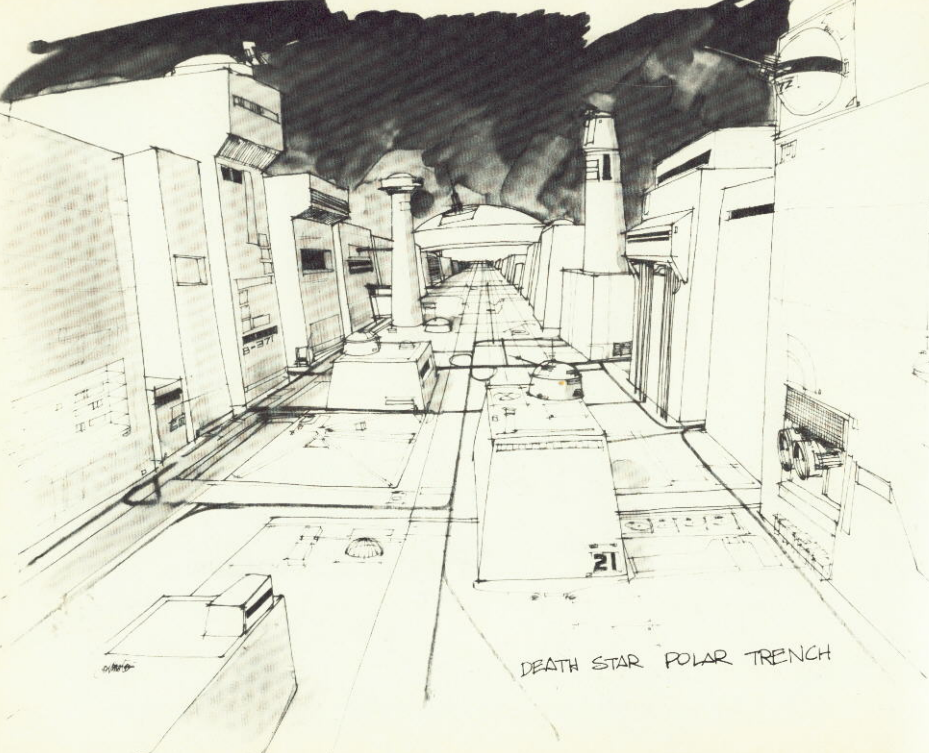


OVER THE DEATH
STAR EQUATOR

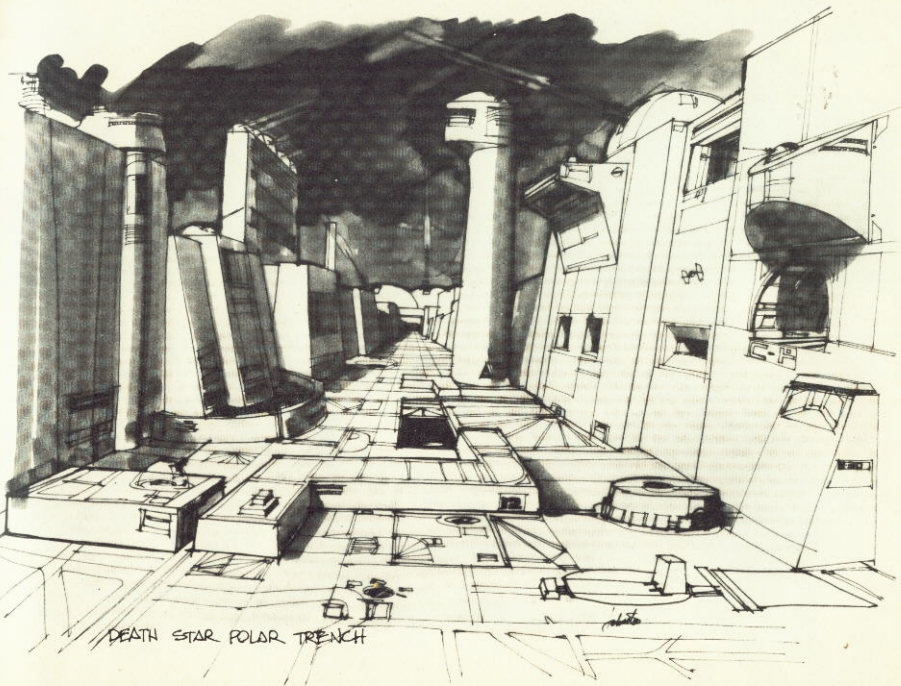




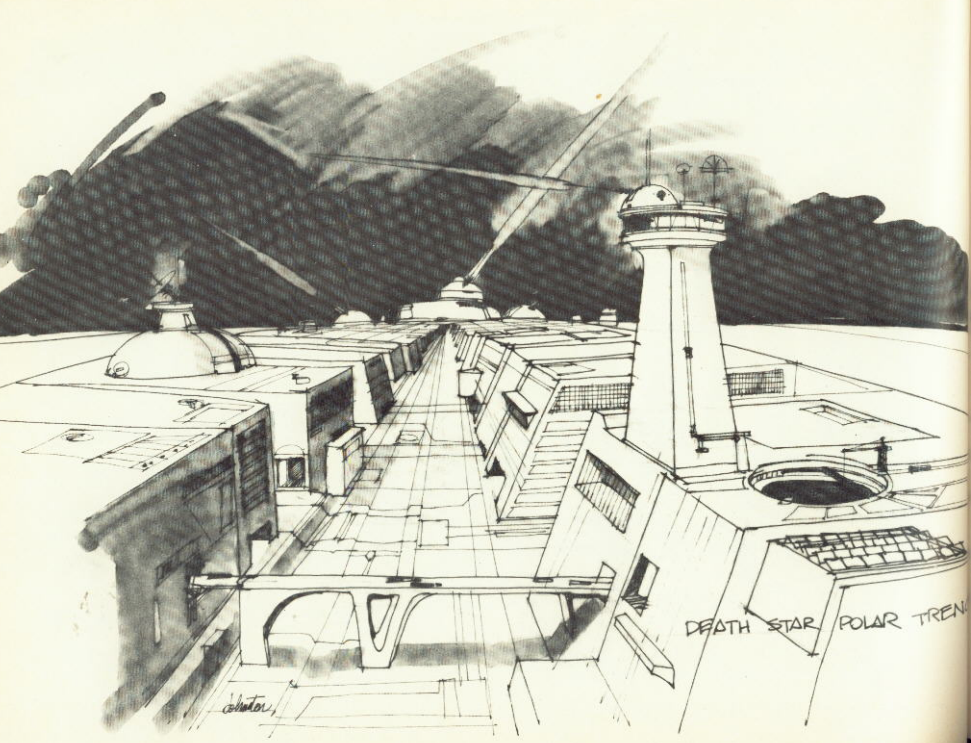
DEATH STAR OVER LASER EYE

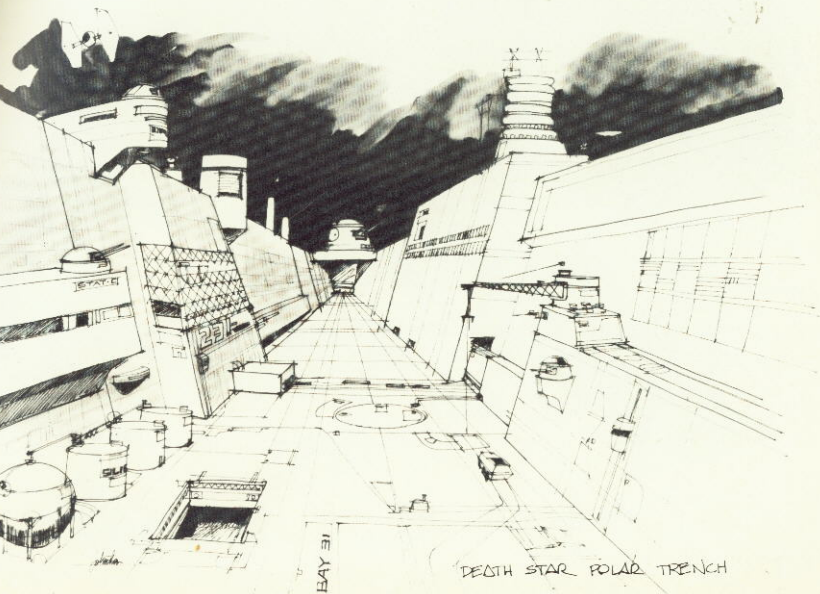


DEATH STAR POLAR TRENCH



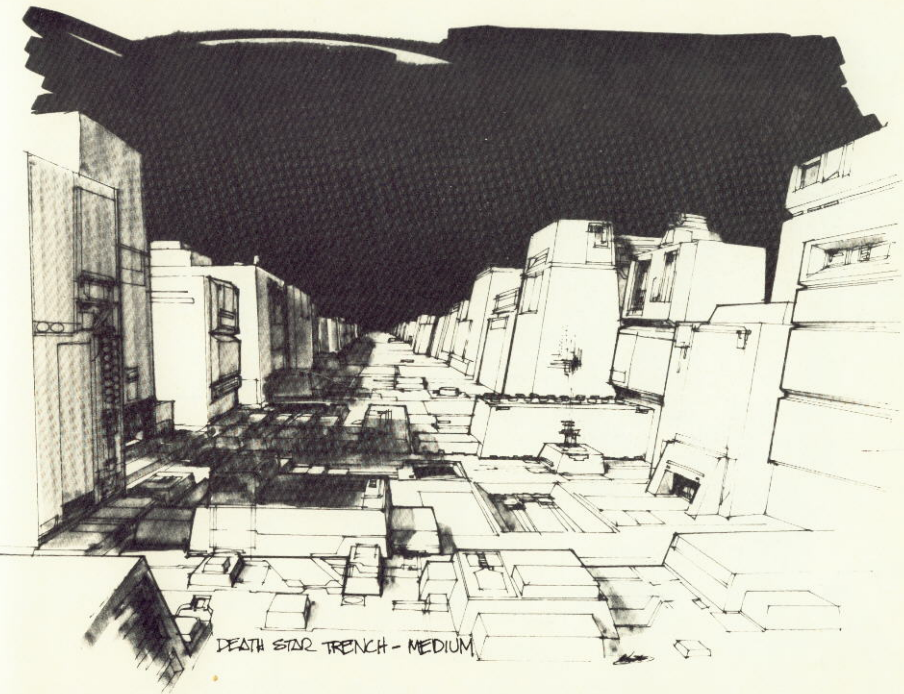
DEATH STAR POLAR TRENCH



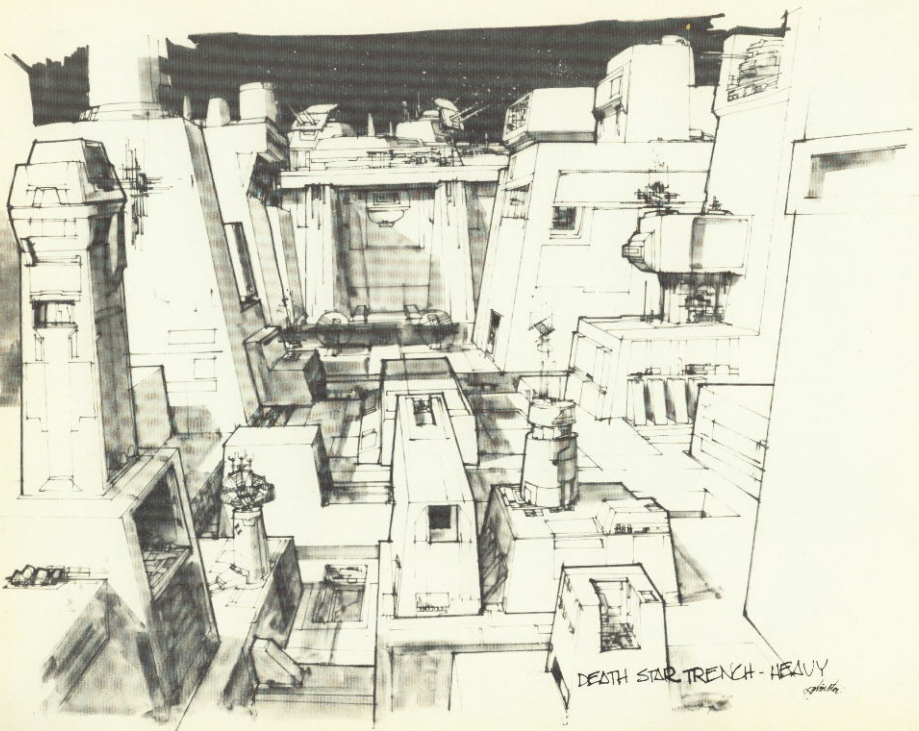




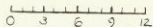
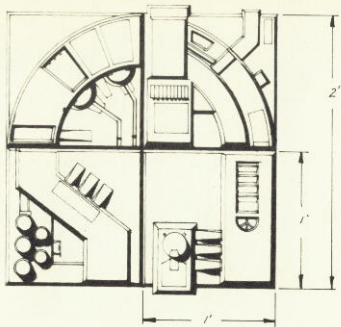
DEATH STAR TRENCH - LIGHT



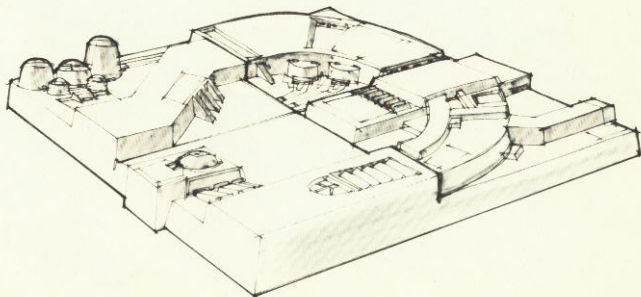
DEATH STAR TRENCH - MEDIUM



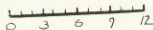
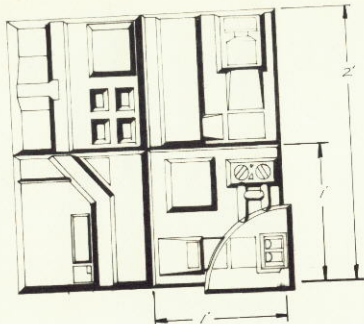
DEATH STAR TRENCH - HEAVY
giblin



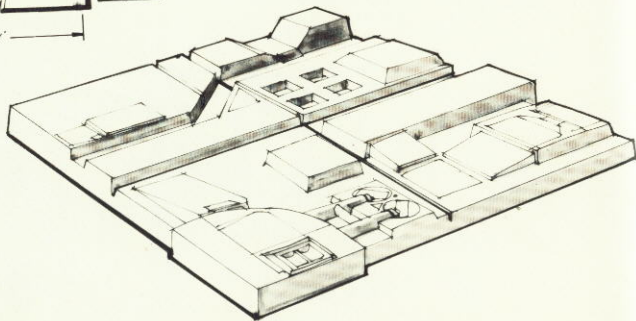
SCALE 2" = 1'



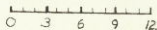
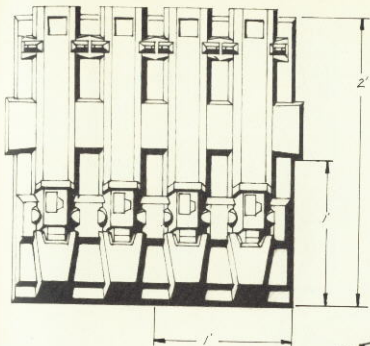
DEATH STAR MODULE - 1



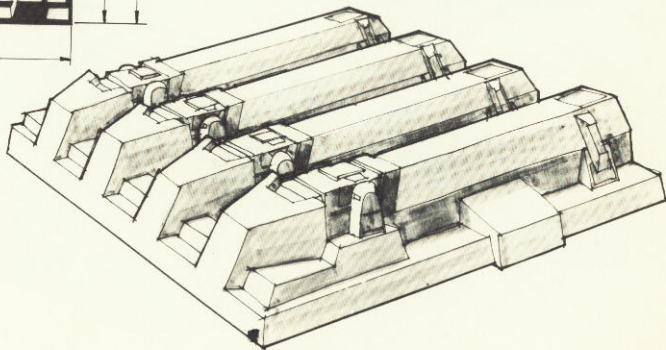
SCALE: 2"=1'



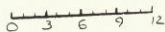
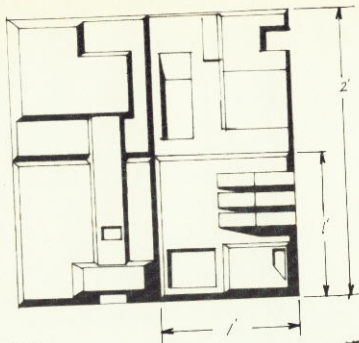
DEATH STAR MODULE -2



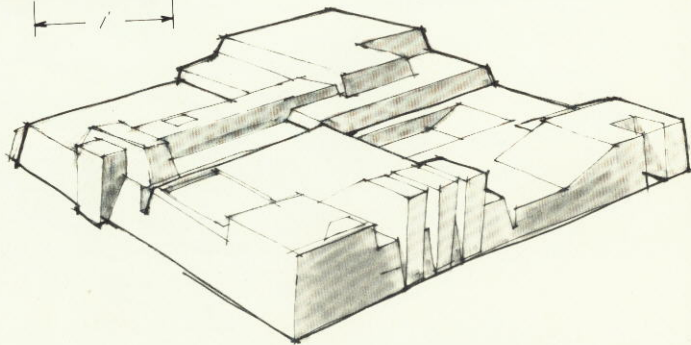
SCALE - 2' = 1'



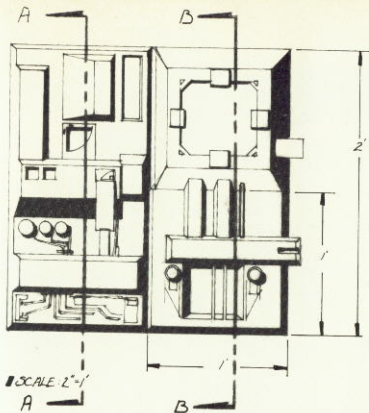
DEATH STAR MODULE - 3



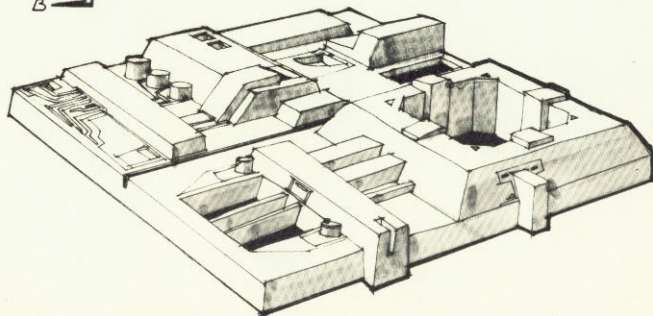
SCALE 2" = 1'



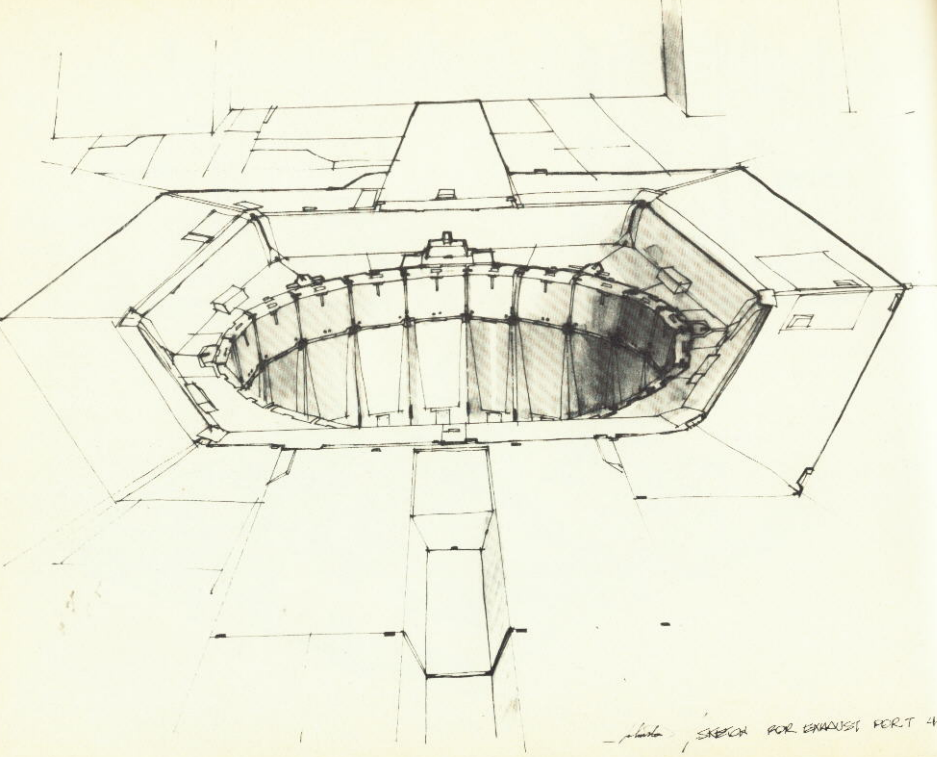
DEATH STAR MODULE - 4

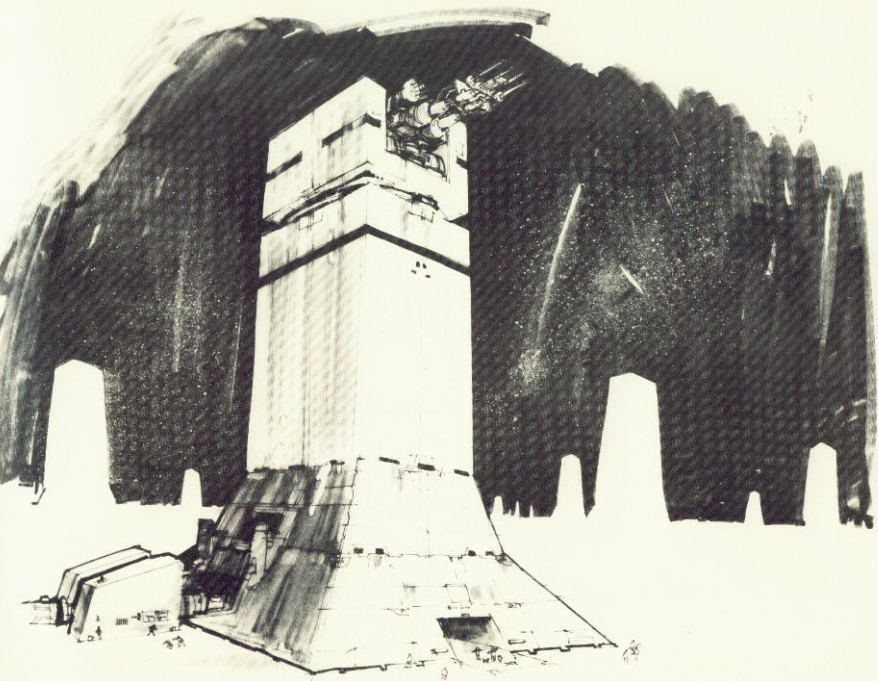


■ TYPICAL DEATH STAR PANEL



DEATH STAR MODULE - 5





DEATH STAR LASER CANNON

LASER GUN
DETAIL TO BE
ADDED LATER



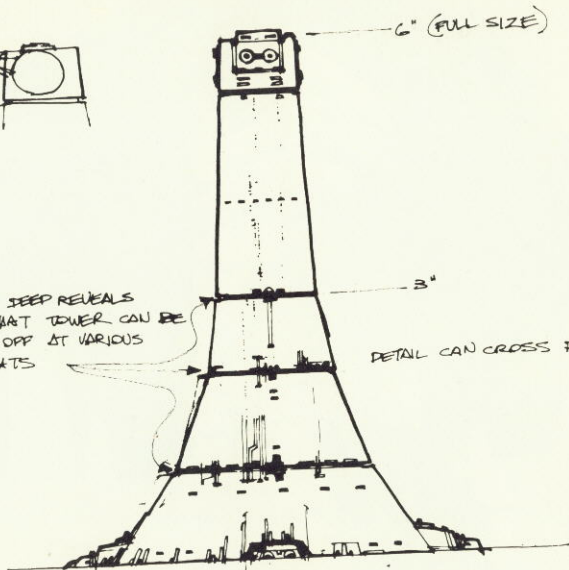
DEEP REVEALS
SO THAT TOWER CAN BE
CUT OFF AT VARIOUS
HEIGHTS



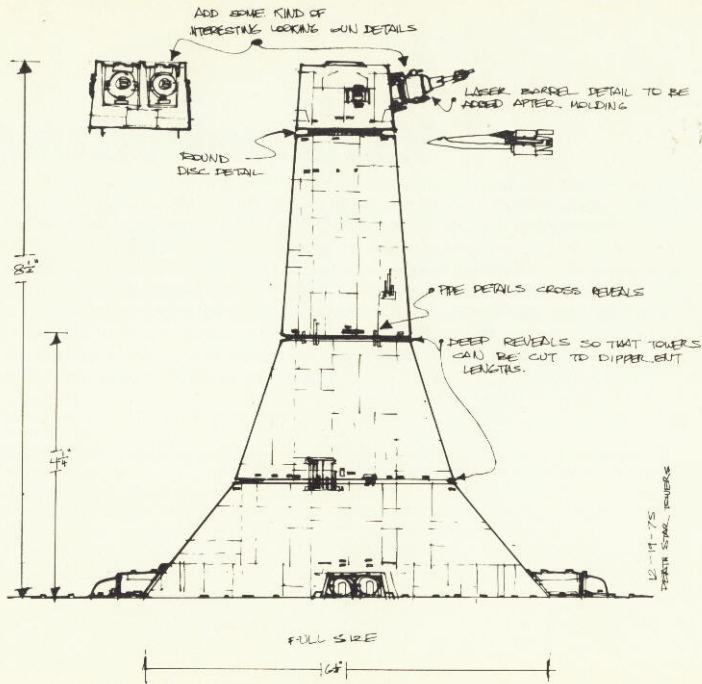
6" (FULL SIZE)

3"

DETAIL CAN CROSS REVEALS



DEATH STAR TOWER



12-14-75
TERRA STAR TOWERS

DEATH STAR TOWER

MILLENNIUM FALCON

The *Falcon* is a ship that has undergone severe modifications. It may have begun life as a stock light utility freighter, but through a bit of chopping and channeling and addition of a factory-unauthorized powerplant at the hands of Han Solo, it has become a dependable, ultralight-speed craft, perfectly suited to a smuggler's needs. The traditional saucer shape broke away from the even more familiar long and skinny look. To give it direction, large angular mandibles and freight-loading arms were added to the front. Protruding corridor tubes were covered with three-sided structures. The rear deck and underside became a mass of pipes and ducting, feeding the oversized engines. An offset cockpit and radar dish provided an asymmetric balance. The *Falcon* was creatively detailed in miniature and full size.

Pages 52-3: Various angles of the *Millennium Falcon*.

Page 54: Full-size boarding ramp (*Millennium Falcon*).

Pages 55-8: Boarding ramp and door mechanisms on the *original* pirateship.

Page 59: Landing-gear detail for full-size *Millennium Falcon*.

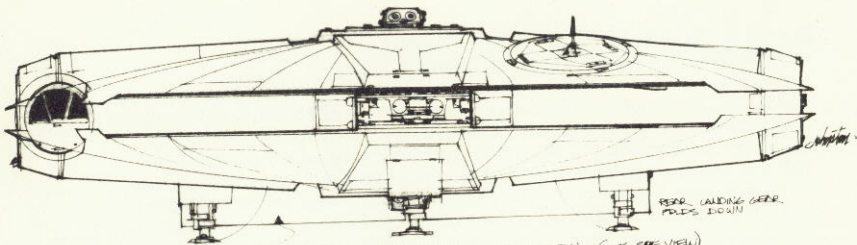
Pages 60-1: Various angles of the *Millennium Falcon*.

Pages 62-3: Scale drawings for correlation of model to full-size set in England.

Pages 64-5: Sketches for full-size and miniature cockpit. Miniature was equipped with fiber optic dashlights, screens and readouts.

Page 66: Sketch for gunport/mounting area on miniature *Millennium Falcon*.

Pages 67-71: Sketches for full-size and miniature versions of gunport and laser guns (*Millennium Falcon*).

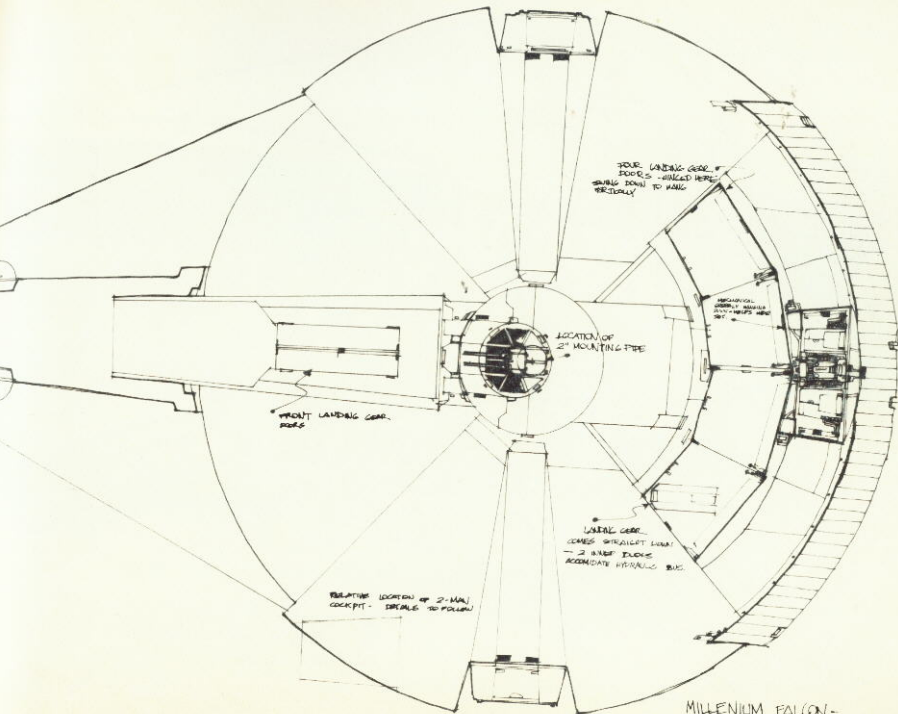


FOUR RUNS FULL LENGTH OF LANDING GEAR. SPAN (SEE SIDE VIEW)

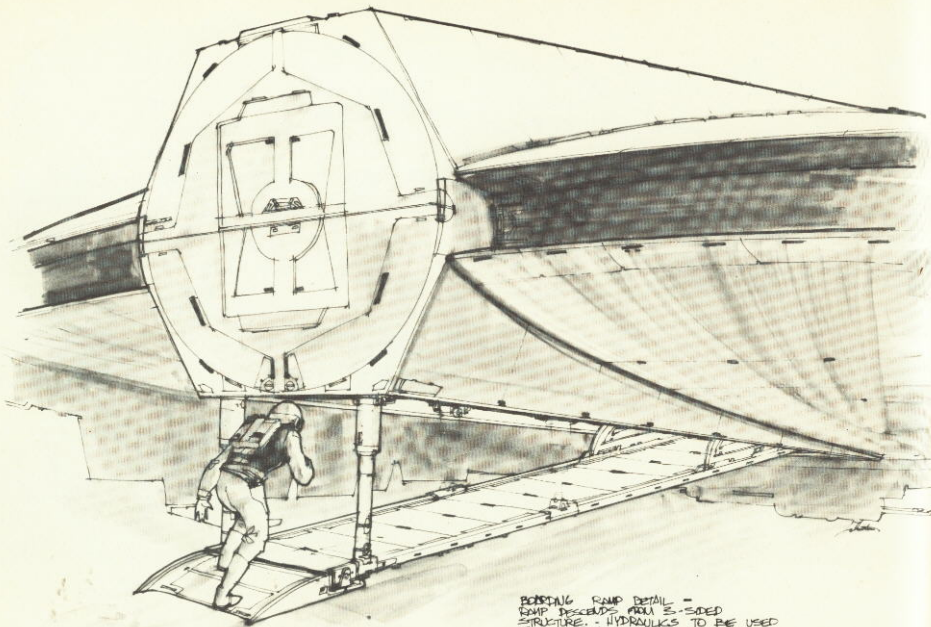
REAR LANDING GEAR
FOLDS DOWN

MILLENNIUM FALCON

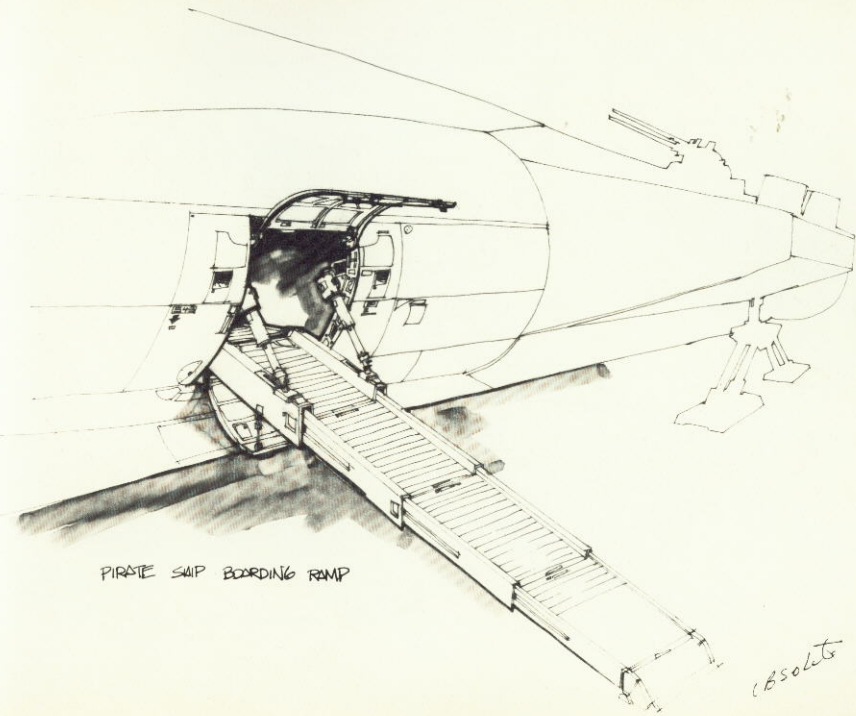
FRONT



MILLENNIUM FALCON -
BOTTOM



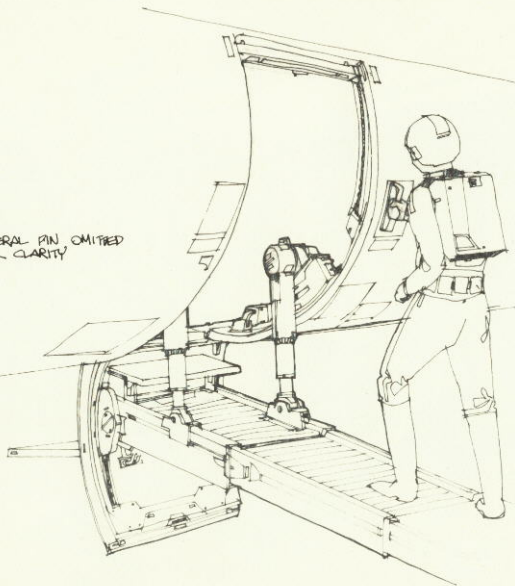
BOARDING RAMP DETAIL -
RAMP DESCENDS FROM 3-SIDED
STRUCTURE - HYDRAULICS TO BE USED
FOR SUPPORT ON FULL SIZE SHIP.
FOOT FOLDS UP.
MILLENNIUM FALCON



PIRATE SHIP BOARDING RAMP

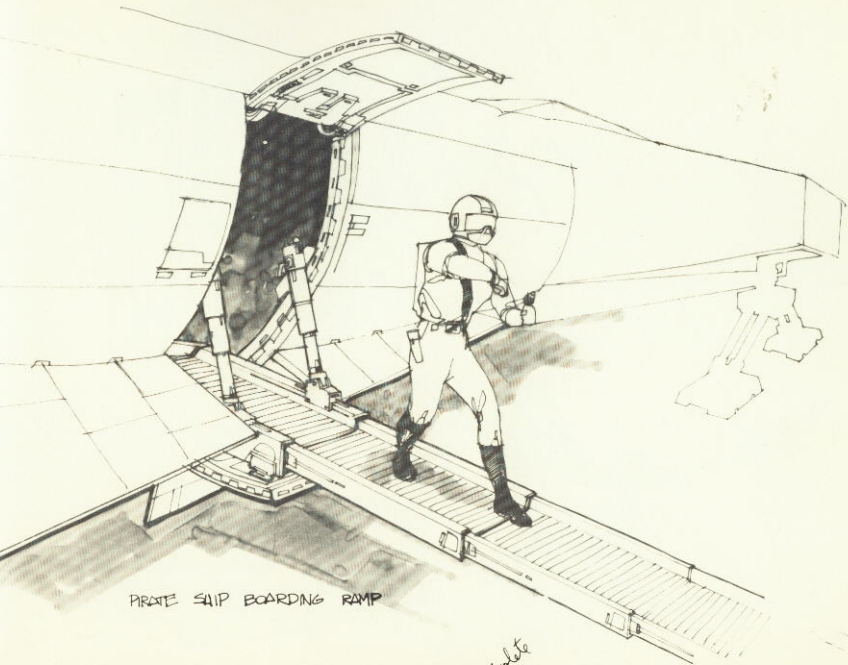
Absolute

LATERAL PIN OMITTED
FOR CLARITY



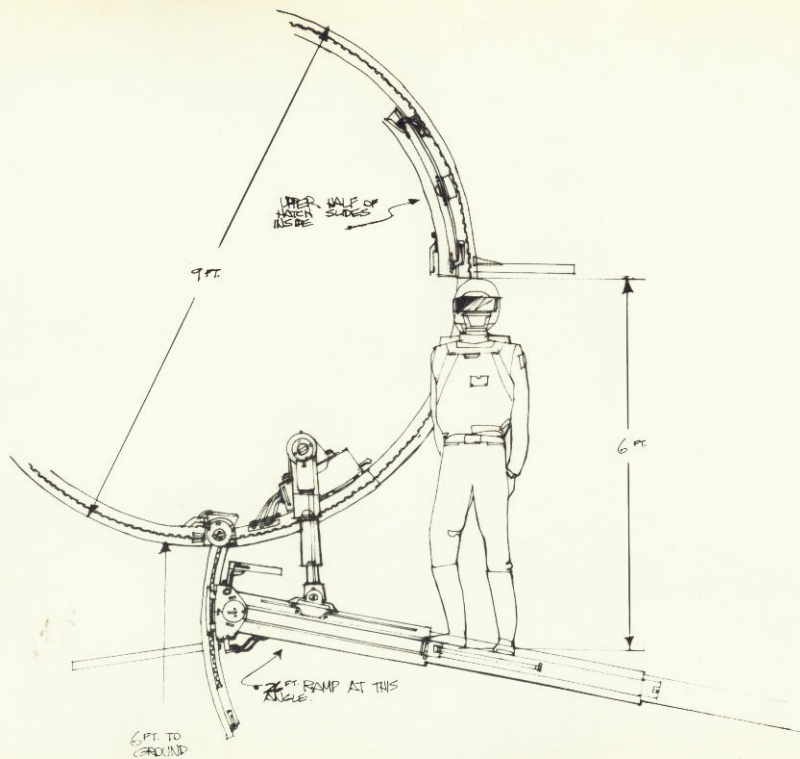
PIRATE SHIP BOARDING RAMP

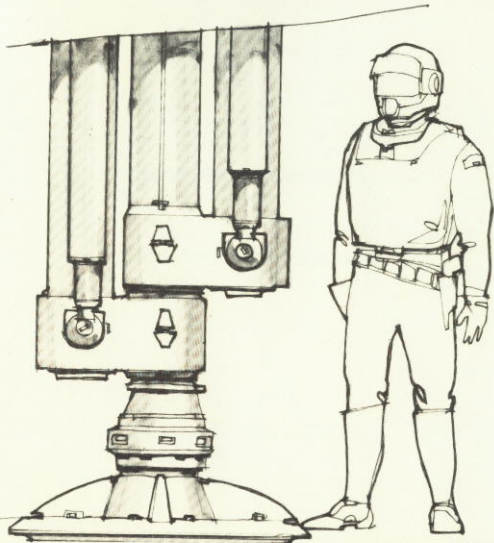
Obsolete



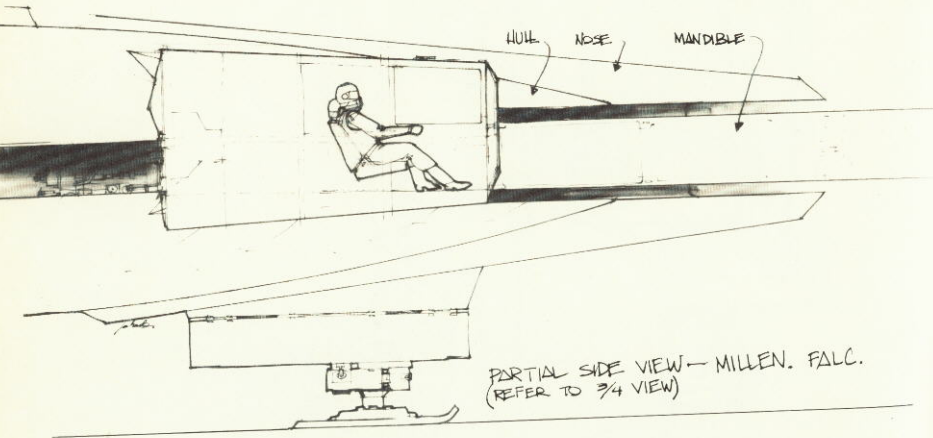
PIRATE SHIP BOARDING RAMP

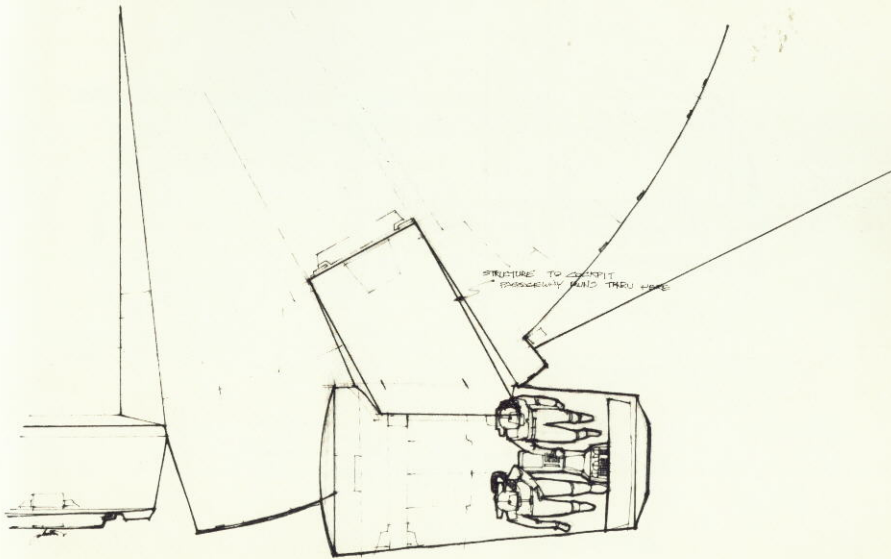
Obolite



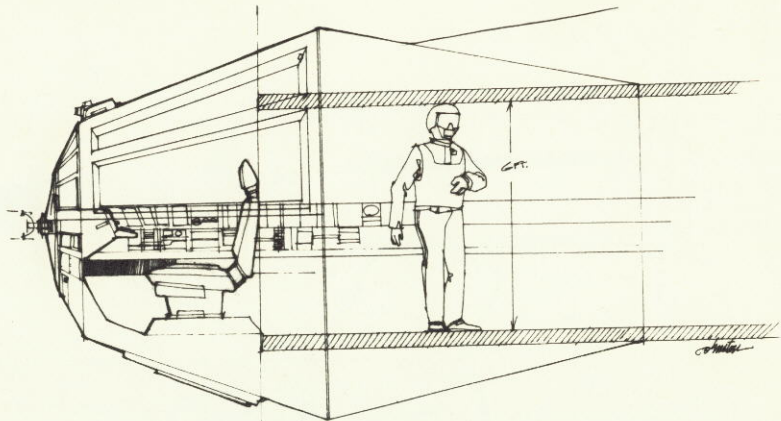


LANDING GEAR DETAIL - PIROTE SHIP
GEAR IS ESSENTIALLY THREE VERTICAL
TUBES. CENTER TUBE IS SUPPORT.
OUTER TUBES APPEAR TO SLIDE ON CENTER
TUBE. 12-16-75



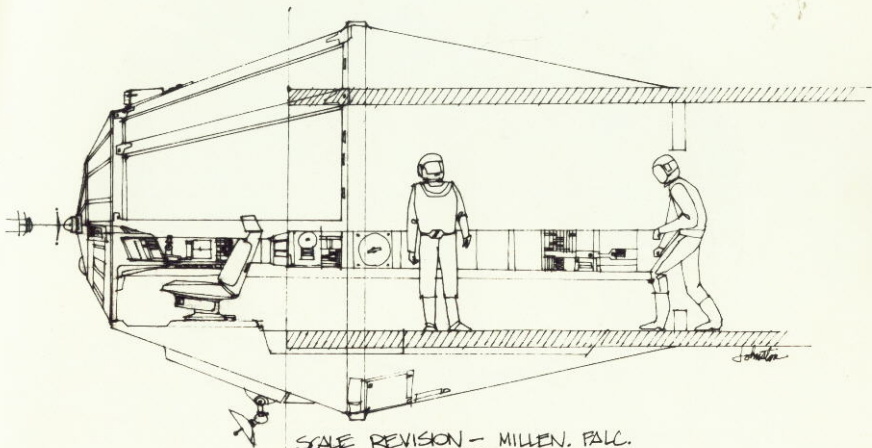


OVERHEAD VIEW - COCKPIT AREA
MILLEN. FALC.



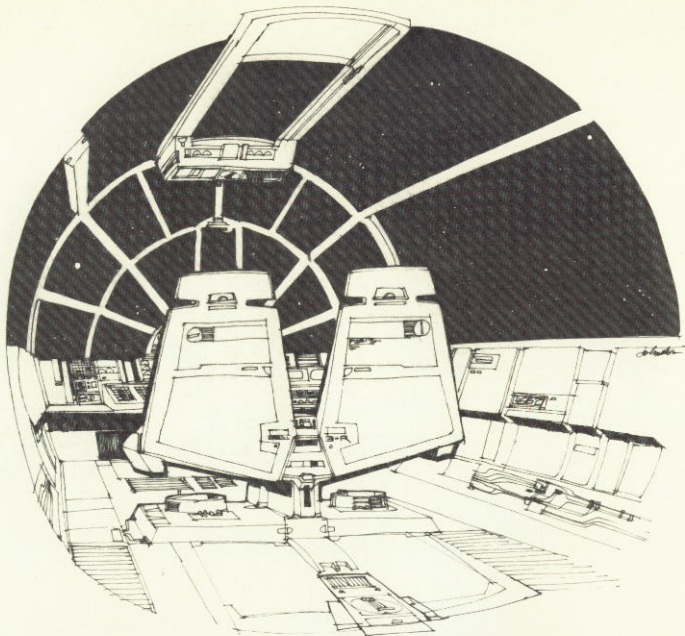
END OF EXISTING PERKINS TUBE -
TUBE DOES NOT EXIST IN FULL-SIZE MOCKUP.

COCKPIT SCALE - MILLENNIUM FALCON

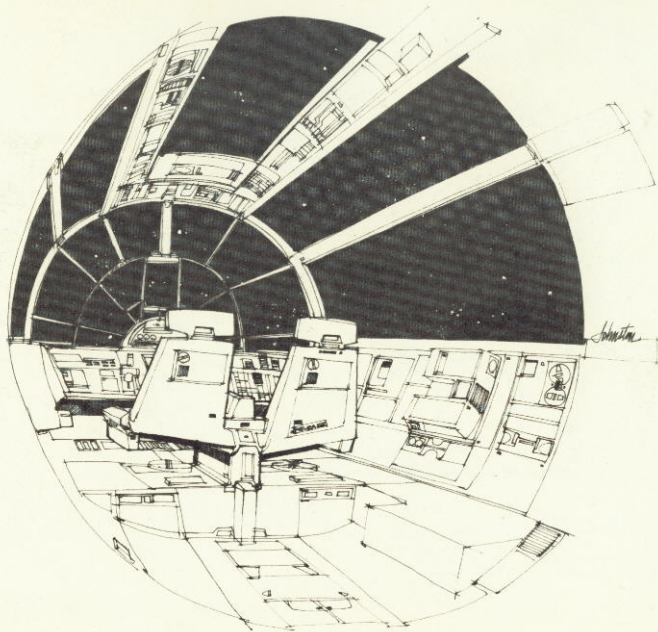


SCALE REVISION - MILLIN. FALC.
END OF EXISTING FLEET TUBE

OBsolete !
OBsolete ?



INTERIOR COCKPIT- MILLENNIUM FALCON (FULL AND MINI)



COCKPIT - FALCÃO / SCALE REVISION

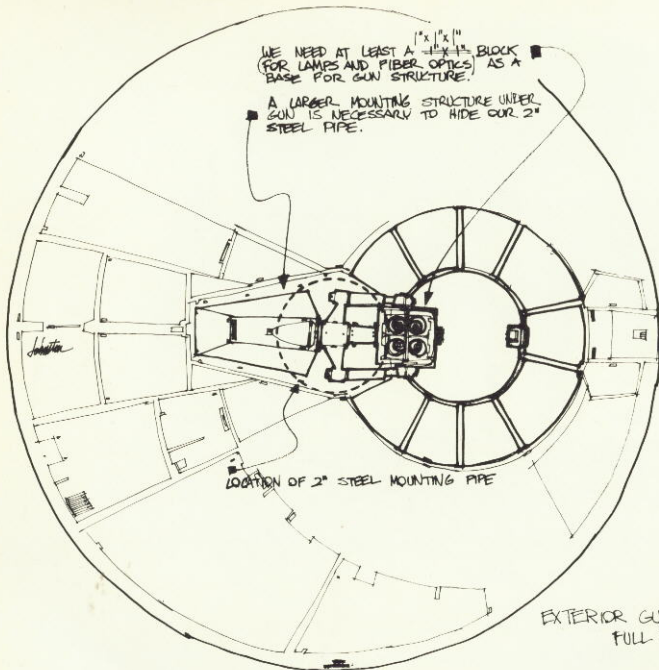
WE NEED AT LEAST A $1' \times 1' \times 1'$ BLOCK
(FOR LAMPS AND FIBER OPTICS) AS A
BASE FOR GUN STRUCTURE.

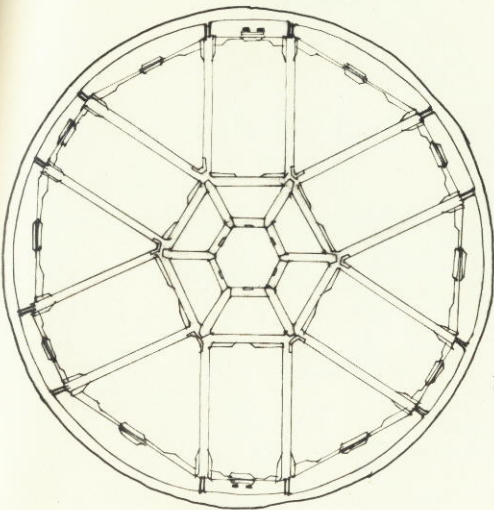
A LARGER MOUNTING STRUCTURE UNDER
GUN IS NECESSARY TO HIDE OUR 2"
STEEL PIPE.

LOCATION OF 2" STEEL MOUNTING PIPE

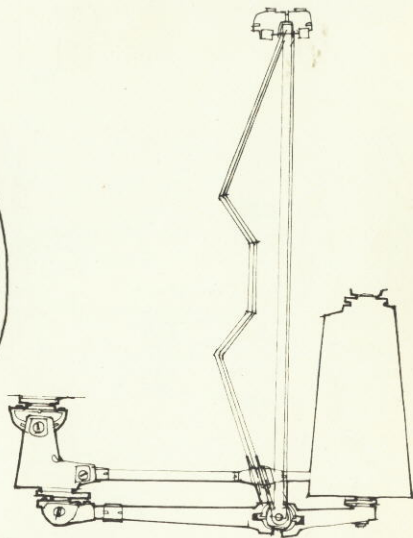
FRONT OF SHIP

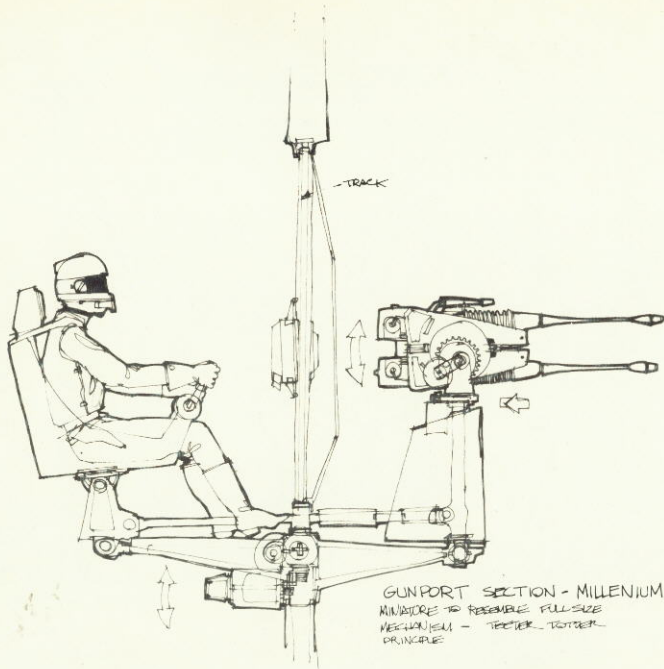
EXTERIOR GUNPORT-MILLEN, CAL.
FULL SIZE



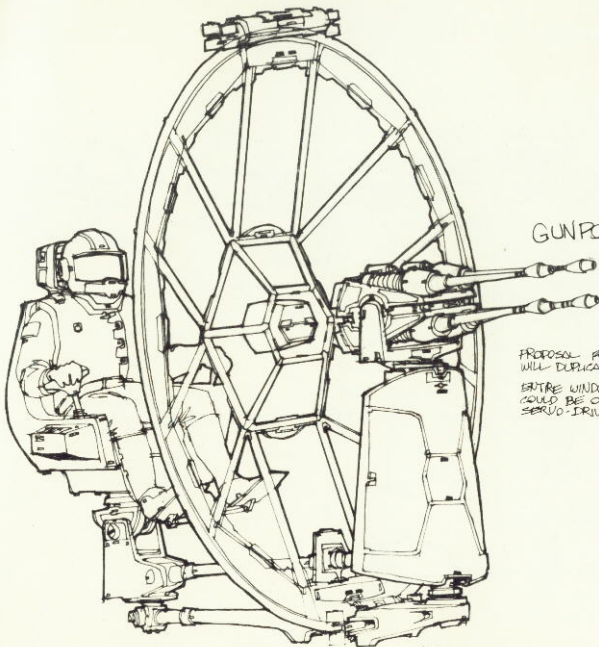


WINDOW CONFIGURATION





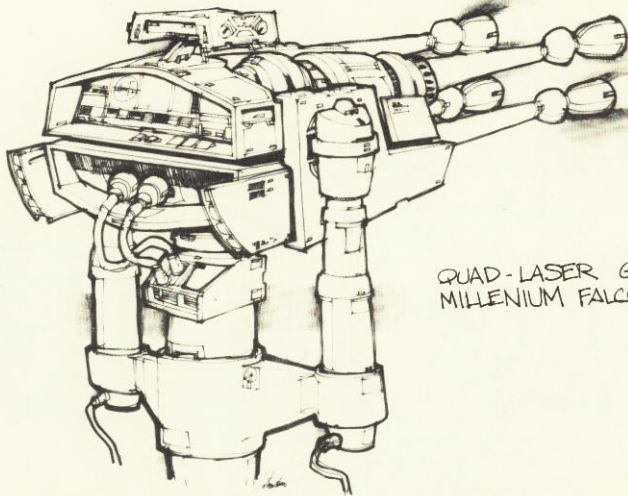
GUNPORT SECTION - MILLENNIUM FALCON
MINIATURE TO RESEMBLE FULL SIZE
SECTION - TETHER TETHER
PRINCIPLE



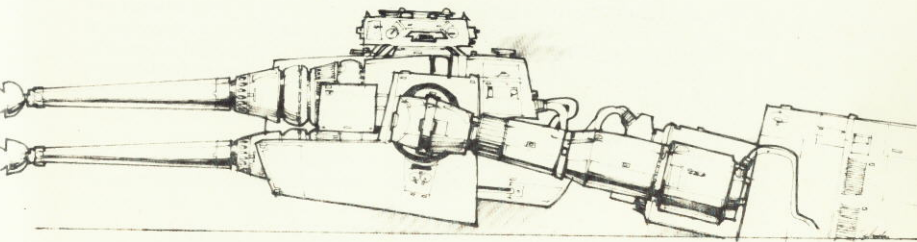
GUNPORT

PROPOSAL FOR PIATE SHIP GUN. (MINIATURE
WILL DUPLICATE FULL-SIZE MECHANISM)

ENTIRE WINDOW REVOLVES WITH GUN. MECHANISM
COULD BE OPERATED MANUALLY OR THROUGH
SERVO-DRIVES.



QUAD-LASER GUN
MILLENNIUM FALCON

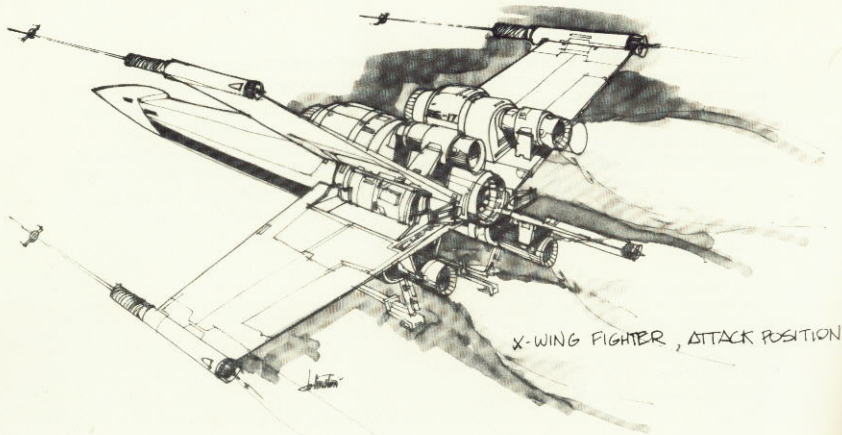


THE X-WING

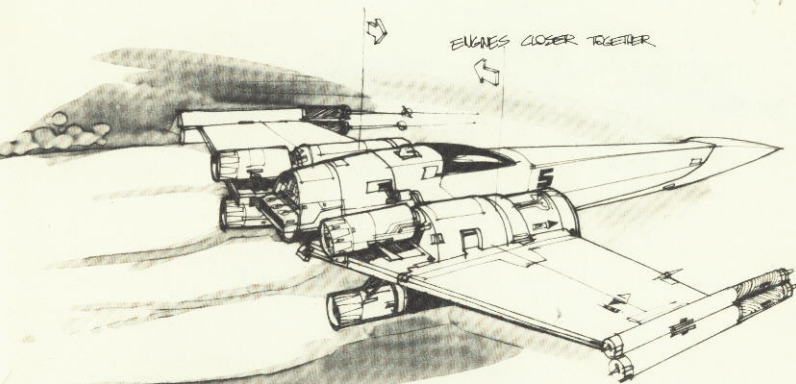
The Rebel forces are not financially well off. The ships were conceivably acquired decades earlier at a discount, and have been made to last through prudent, but affectionate maintenance. Engines and body panels are scavenged from derelict craft. Paint and polish being unaffordable luxuries, appearance is unimportant. The one graphic consistency in the X-wing squadron is a large red horizontal stripe on the flank of each ship. In addition to attaining the used-car look, the X-wing fighters took on a kind of tough, no-nonsense quality through production changes. Engines were beefed up, wings thickened. A lot of hardware is allowed to show on the surface, where it complements the carefully finished body shapes, creating a feeling of styled functionalism.

Pages 74-9: Early X-wing fighter concepts from different angles. In the final version, upper and lower split-circle engines became fully circular to accommodate thicker wings, and a segmented canopy replaced the "bubble" canopy to eliminate reflection problems.

Pages 80-1: Full-size version of cockpit targeting device.

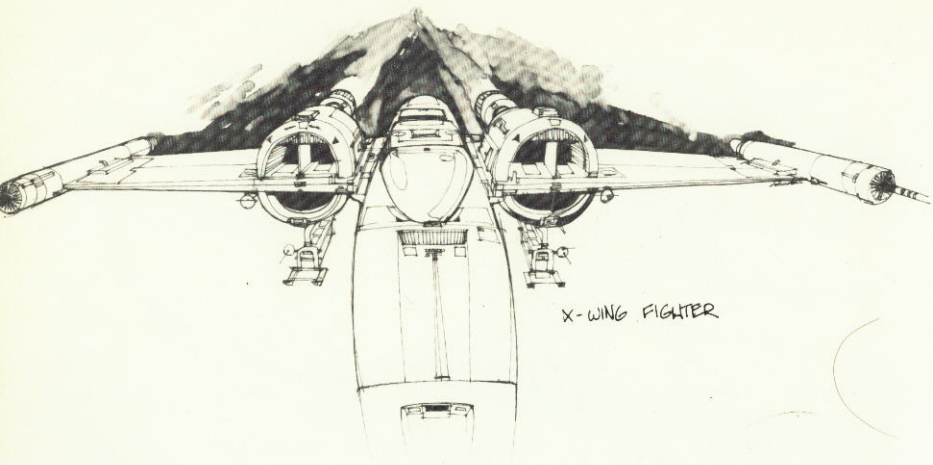


X-WING FIGHTER , ATTACK POSITION

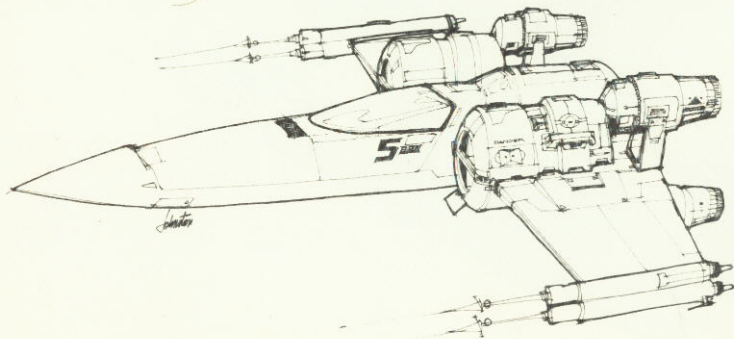


ENGINES CLOSER TOGETHER

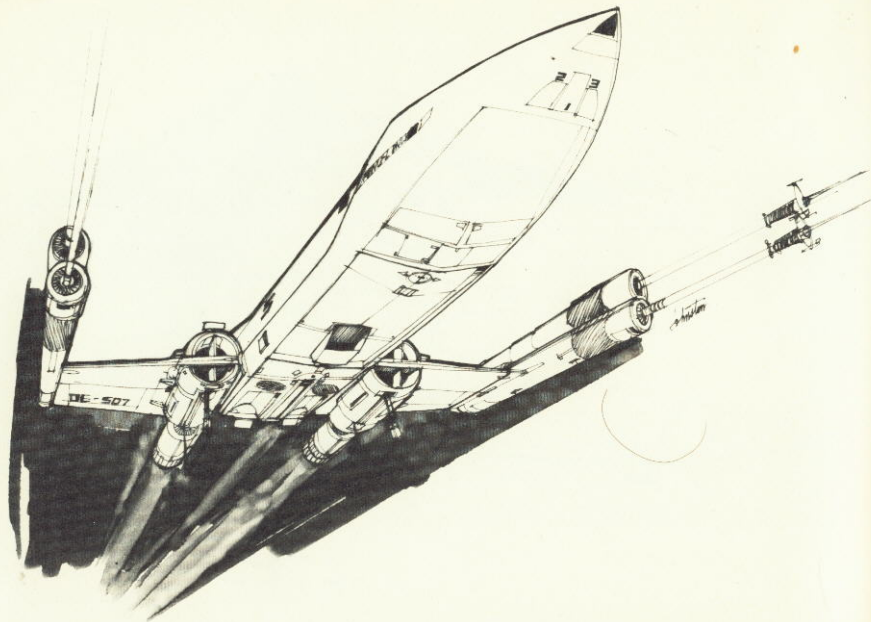
X-WING FIGHTER, WINGS IN
LANDING/TAKE-OFF MODE

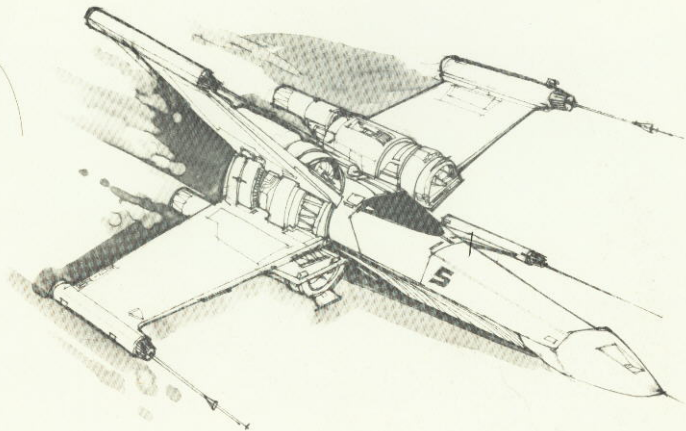


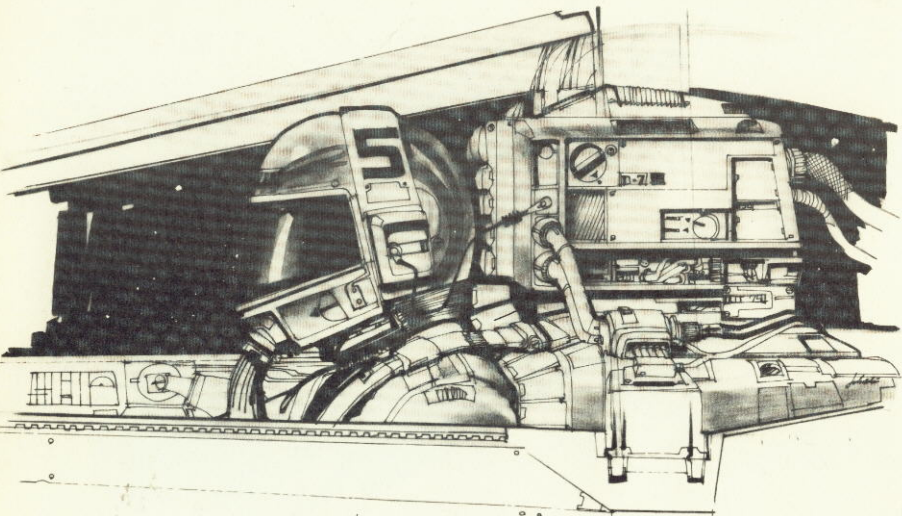
X-WING FIGHTER



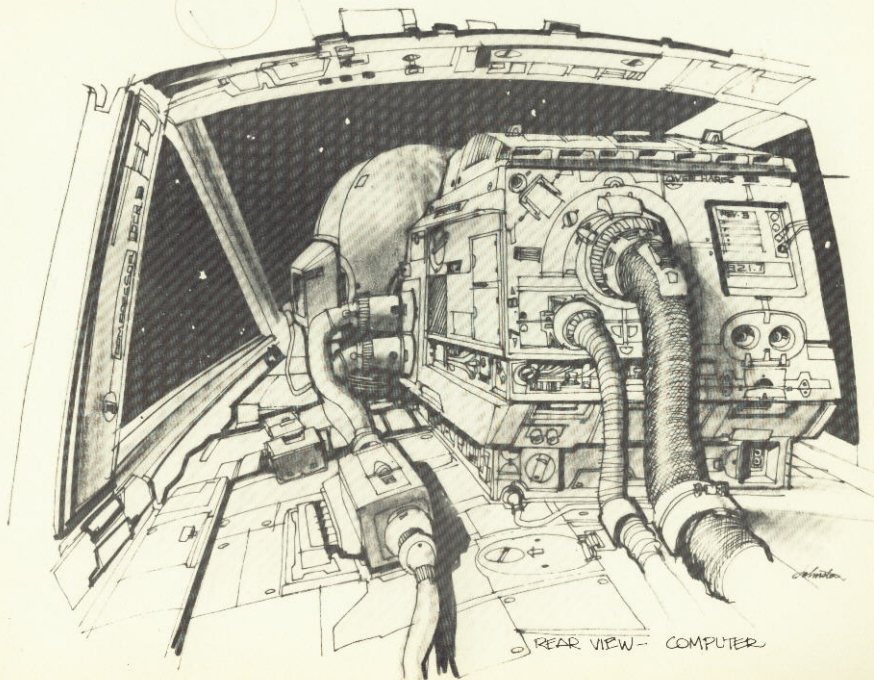
X-WING FIGHTER (ENCLOSED R-2 UNIT)







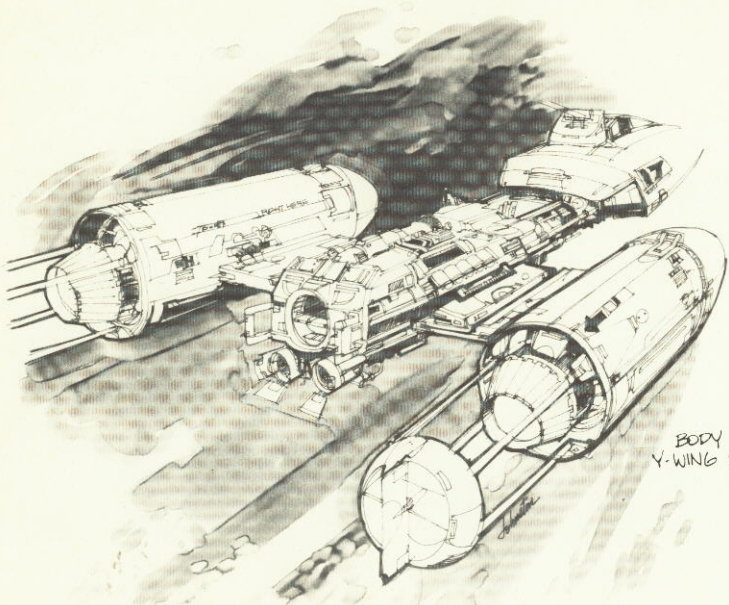
X-WING COCKPIT / IN-FLIGHT TARGETING COMPUTER



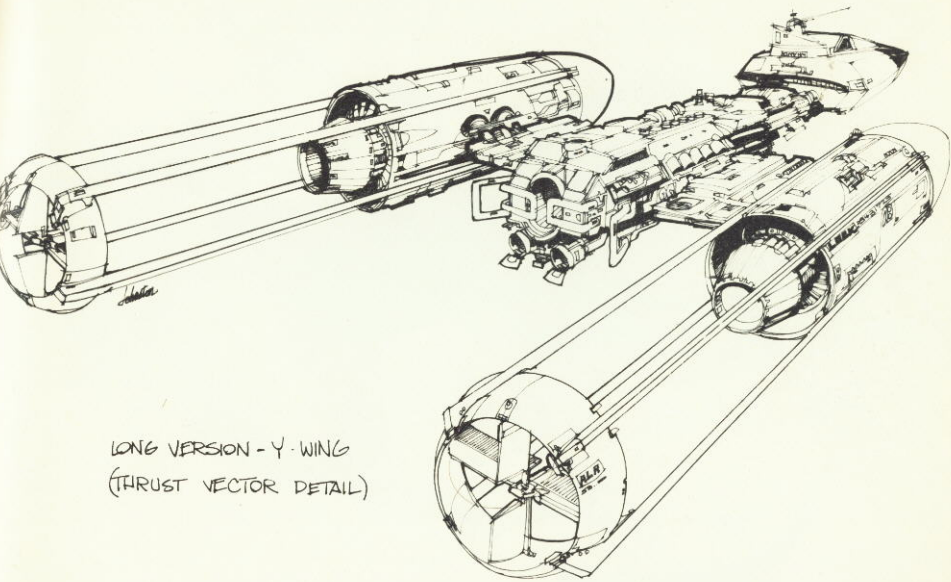
THE Y-WING FIGHTER

The Y-wing fighters make up the other half of the Rebel armada. It is almost an exaggeration of the idea of combining styling and function and is one of the most visually exciting ships in the film. The smooth "Grand Prix Car" shapes of the protruding pilot pod end abruptly in a mechanic's nightmare of engine and wing assembly. Conceptually, the slick body shell once covered the length of the craft until Rebel mechanics, tired of frequent breakdowns, simply left the "hood" off. The Y-wing has been hot-rodded and stripped down to fighting weight.

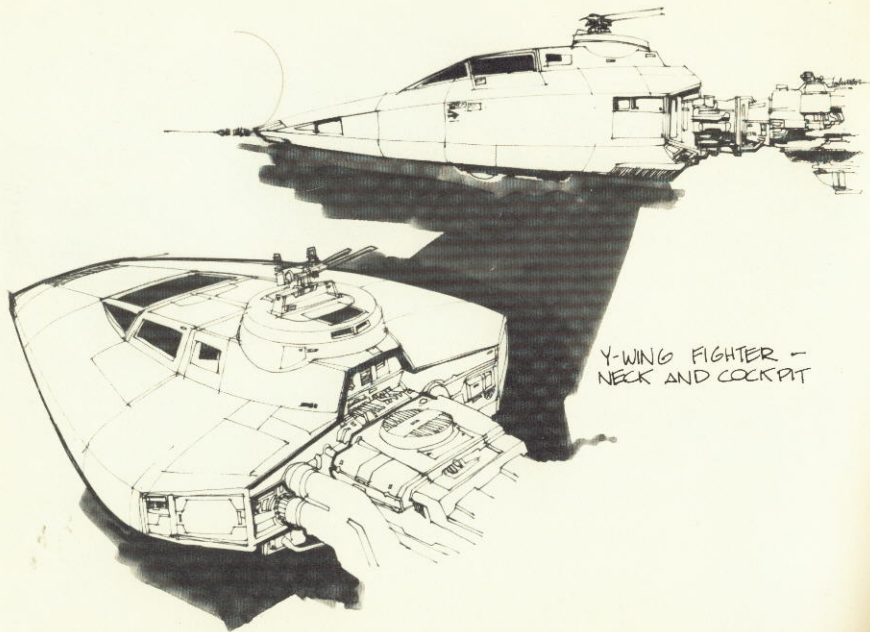
Pages 84-9: Early sketches of Y-wing fighters. From first prototype through design and re-design to final version, the Y-wing changed very little, aside from a scaledown from two-man to one-man.



BODY DETAIL -
Y-WING FIGHTER

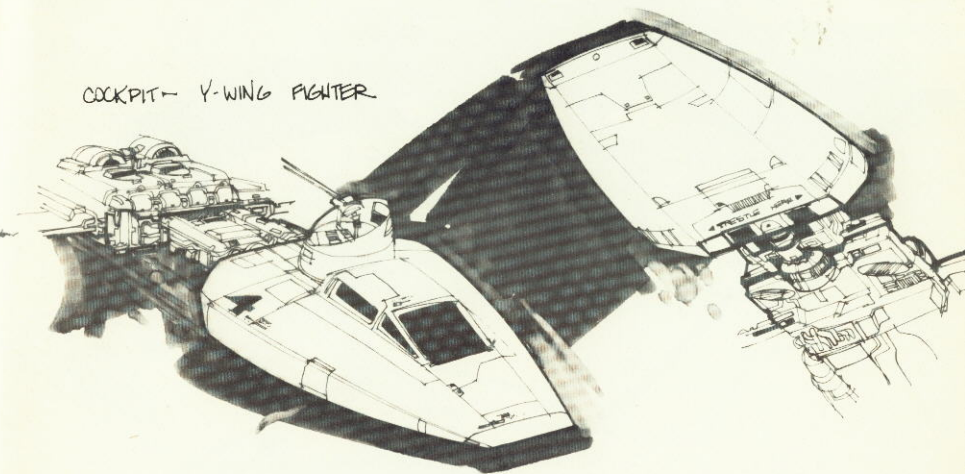


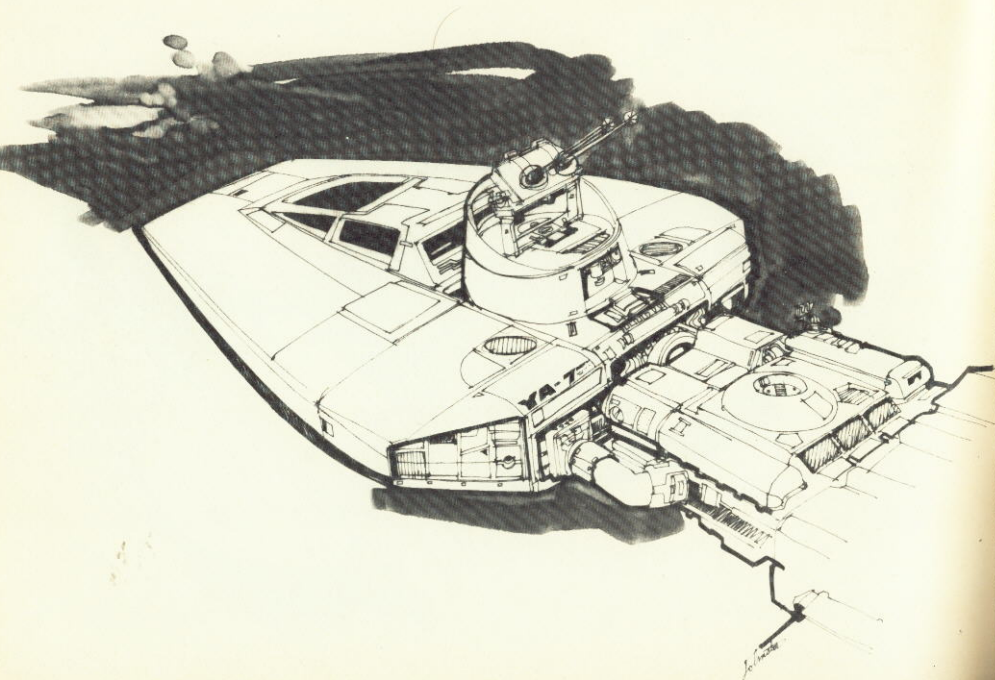
LONG VERSION - Y-WING
(THRUST VECTOR DETAIL)

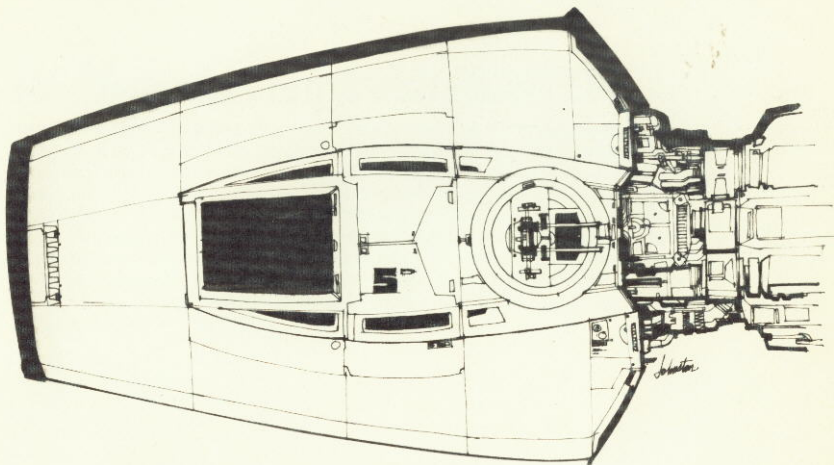


Y-WING FIGHTER -
NECK AND COCKPIT

COCKPIT - Y-WING FIGHTER







OVERHEAD VIEW/ COCKPIT
Y-WING FIGHTER

TIE (Twin Ion Engine) FIGHTER

The Imperial fighters needed, above all, a very sinister look. Having technologically advanced forms of propulsion, almost any basic shape was feasible. The idea of combining large geometric shapes works quite well to lend an alien look. Joining these shapes are angular, sharp-edged support structures, steel buttresses reaching out and gripping tubes. The overall effect is one of gothic evil, as if the Empire fully intended this to be a terrifying psychological weapon. Hitler's Stuka Dive Bomber used an artificially created banshee wail to strike terror into its victims. The fighter achieves the same effect with a coldly sinister appearance. Vader's personal ship is a variation of the basic TIE theme. It is, in essence, "next year's model"—faster, sleeker, and almost bat-like with its angled-in wings.

Page 93: Concept sketch for a boarding craft which was written out of the script. The wing configuration was later used in Vader's ship.

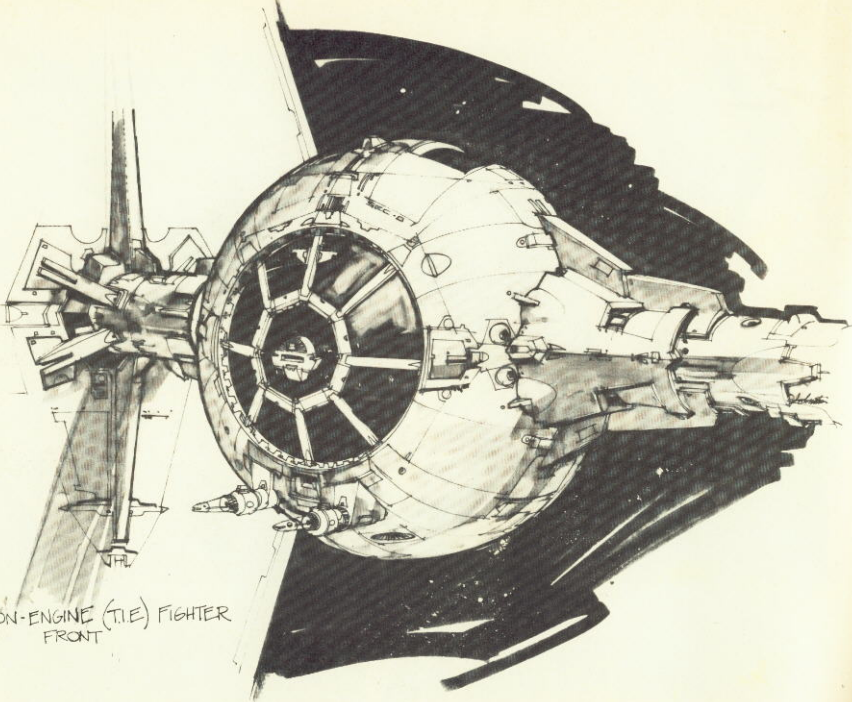
Pages 94-5: Front and rear views—TIE fighter. This was the only ship that was built exactly as sketched.

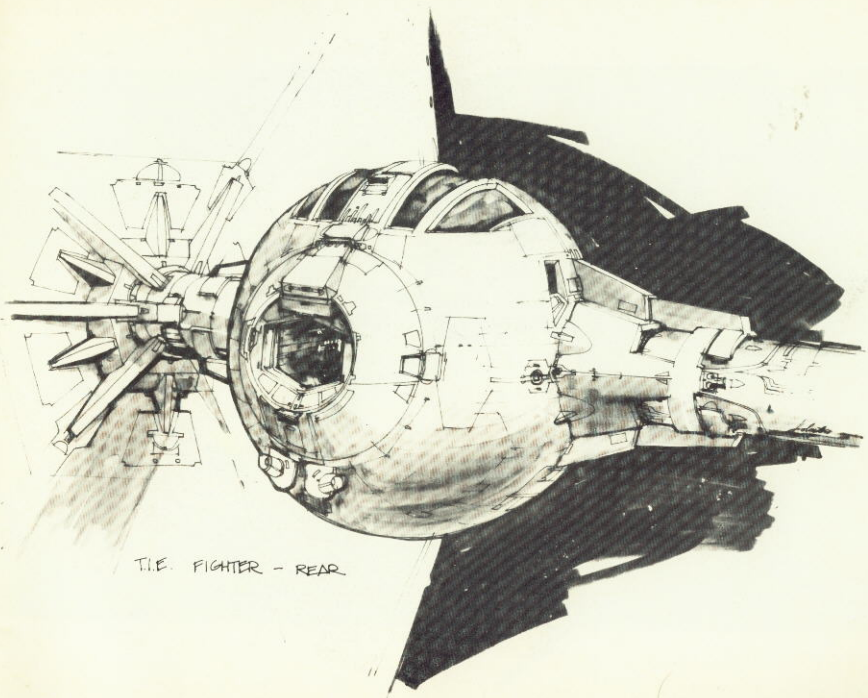
Page 96: Darth Vader's TIE fighter.

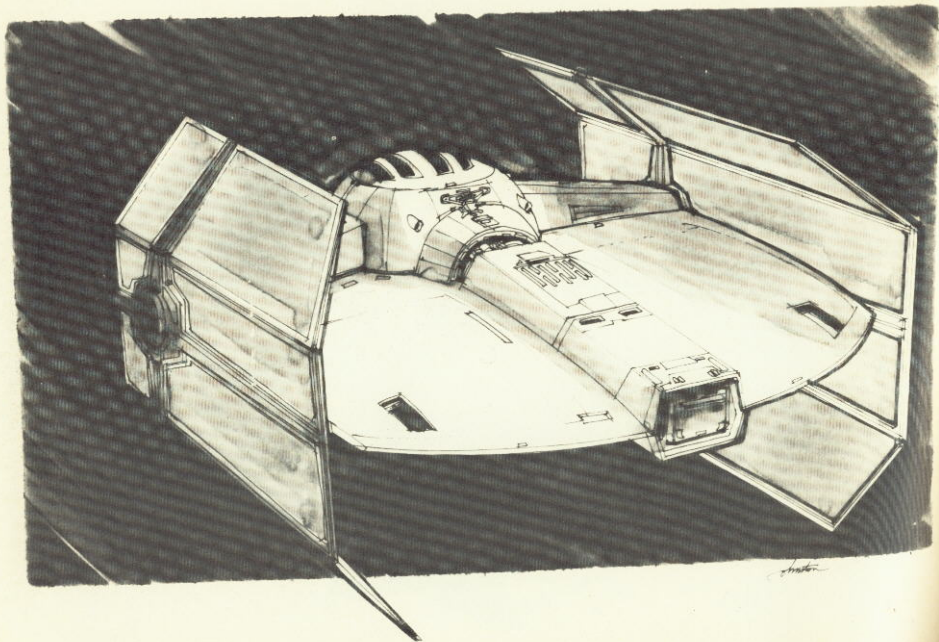


T.I.E BOARDING CRAFT

TWIN-ION-ENGINE (T.I.E) FIGHTER
FRONT







**THIS WAS THE BEGINNING OF THE
MOST POWERFUL, FANTASTIC, MIND-BOGGLING
SIGHTS EVER PUT ON FILM!**

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THE LIFE POD • THE TIE FIGHTER • THE SANDCRAWLER • THE X-WING FIGHTER
THE REBEL BLOCKADE RUNNER • THE Y-WING FIGHTER
THE IMPERIAL STAR DESTROYER

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