

STAR WARS

RETURN OF THE JEDI

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OFFICIAL COLLECTORS EDITION

STAR WARS

RETURN OF THE JEDI

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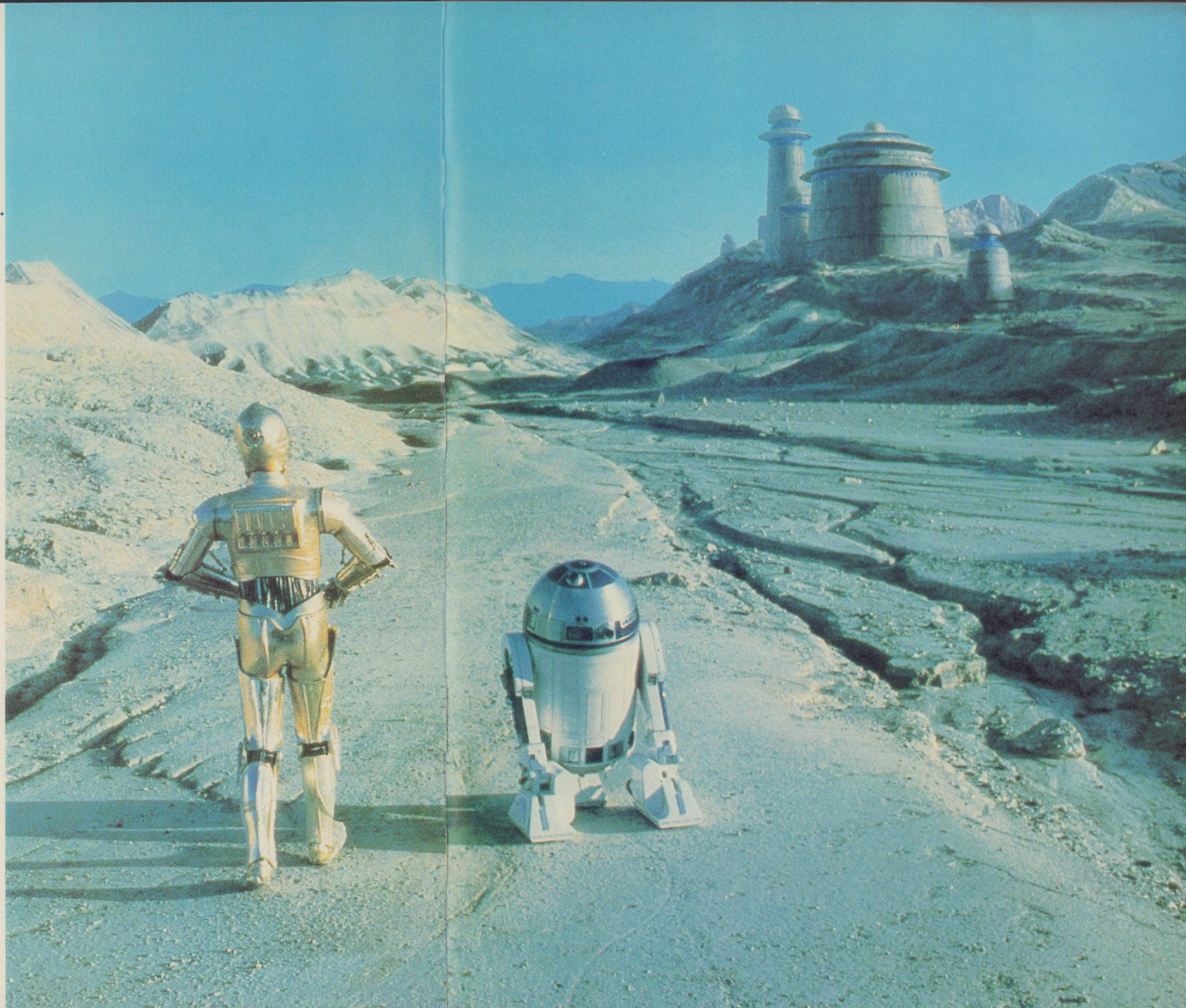
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THE SAGA CONTINUES . . .



THE SAGA CONTINUES . . .



PHOTO: FRANK CONNER
ABOVE: *Max Rebo, keyboard player for the musical trio that performs in Jabba's throne room.*

ABOVE RIGHT: *Luke Skywalker, now a Jedi Knight, has come to see Jabba the Hutt and try to free the carbon-frozen Han Solo.*

PREVIOUS PAGE: *Jabba the Hutt, the ruler of the Galactic underworld.*

"THE REBEL Alliance is continuing its struggle against the tyranny and oppression of the mighty Galactic Empire.

The Emperor has ordered the construction of a new Death Star, a giant armored space station with enough power to destroy an entire planet. It is to be modelled after the original Death Star which was destroyed by Luke Skywalker, then only a fledgling Jedi Knight, some time ago. The new Death Star is designed to be even more powerful than the original and is half-completed, suspended in space near the small Moon of Endor.

Darth Vader, the personification of the evil of the Galactic Empire and the dark side of the Force, arrives on the Death Star to check on its construction schedule and await the arrival of his master, the Emperor.

In another part of the galaxy, R2-D2, a small, barrel-shaped robot who functions as a computer repair and information retrieval droid together with C-3PO, a human-like protocol droid who translates millions of galactic languages, is sent to the desert palace of Jabba the Hutt on the desert-planet of Tatooine. Jabba the Hutt is a repulsive monarch of the smuggling underworld, a sluglike creature with a maniacal grin, huge eyes and a long, mobile tail.

R2-D2 and C-3PO carry a holographic message to Jabba from Luke Skywalker who is now a commander of the Rebel Alliance. Luke (in a hologram) asks for the release of Han Solo who was captured by bounty hunters working for Jabba. Luke also offers the droids to Jabba as a gift. The droids are separated and C-3PO becomes Jabba's translator.



PHOTO: ALBERT CLARKE

Jabba's throne room is filled with grotesque, cuthroat humans, aliens and droids with Jabba the Hutt presiding over the assembled throng, a dancing girl chained to his body.

A smaller room to the side displays the carbon-frozen slab containing Han Solo.

Into this nightmare court comes a mysterious cloaked bounty hunter, Boushh, who offers a captured Chewbacca for sale to the Hutt. Chewbacca is Han Solo's co-pilot, an eight-foot-tall, two hundred year old Wookiee whom Boushh has in chains.

After the final negotiations for the sale of the Wookiee to Jabba the Hutt have been completed, Chewie is put into a cell in Jabba's dungeon. Oola, the dancing girl chained to Jabba, refuses one of his commands and is thrown into the Rancor Pit, a dungeonlike cage beneath the throne room. The Rancor is a dreaded

sixteen-foot-tall fanged beast with a scaly body and enormous clawed



hands kept in the pit for the convenient disposal of anyone or any creature at Jabba's whim.

However, all is not as it seems at Jabba's palace. Boushh turns out to be Princess Leia in disguise. Leia was once a senator and princess on the



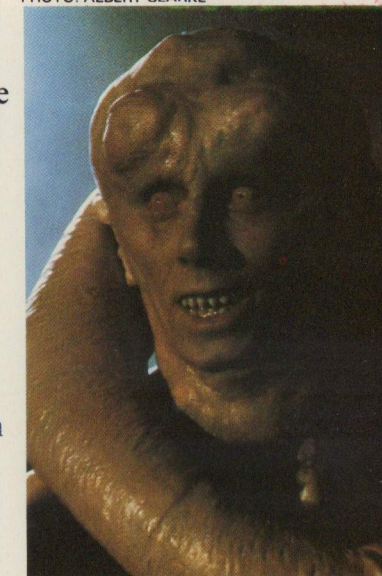
PHOTO: FRANK CONNER

planet Alderaan, destroyed by the original Death Star. She is a dedicated Rebel leader and a close friend of Luke Skywalker and Han Solo. Obviously her 'sale' of Chewbacca was a carefully staged plan to gain access to the palace. Still disguised as Boushh, Leia sneaks into the alcove next to the throne room and releases Han from the block of carbonite.

But Jabba has many spies and servants in his court and Leia and Han are discovered and captured. Solo, suffering from a temporary blindness due to the lingering effects of decarbonization, is led off to the dungeon and put in the same cell as his loyal friend Chewbacca. Princess Leia, to her great disgust, is forced to take the place of Oola as Jabba the Hutt's dancing girl. Appropriately garbed, though still defiant, she is chained to the Hutt in his throne room to await his pleasure.

At this point, a figure robed in a full length black cloak, the hood covering his face, presents himself before Jabba's throne. It is Luke Skywalker, come to rescue his friends. Jabba laughs cruelly at Luke's demands and has him cast into the Rancor Pit. But the smuggler monarch has reckoned without the skill and courage of a Jedi

PHOTO: ALBERT CLARKE



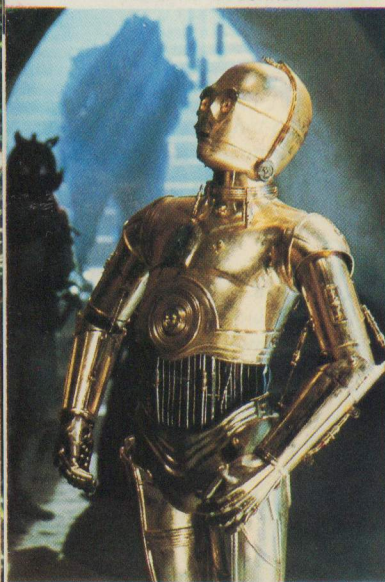
ABOVE: *The grotesque Bib Fortuna, righthand man to Jabba the Hutt.*

LEFT: *Gamorrean guards and other palace henchmen rush to disarm Luke Skywalker as he threatens Jabba with a blaster.*

RIGHT: Luke Skywalker, now a Jedi Knight, demands that Jabba the Hutt release his friends.



PHOTO: FRANK CONNER



ABOVE: With a Gamorrean guard silhouetted in the background, C-3PO listens to Jabba the Hutt.

Knight. Unarmed, Luke battles the Rancor and kills the giant beast.

Furious, the Hutt orders Luke, Han and Chewbacca to be taken to the desert where, for the amusement of himself and his court, they will be thrown into the Great Pit of Carkoon. This deep, cone-shaped pit in the Dune Sea is the resting place of the Sarlacc, a tentacled monster whose victims supposedly suffer slow digestion for a thousand years.

The expedition sets out from the palace in Jabba's Sail Barge, a desert antigravity ship of immense size, accompanied by two small antigravity pilot skiffs. On board the Sail Barge, Jabba and his cronies are served food and drink by R2-D2 who has been forced into service as a waiter. C-3PO and Leia, still chained to the repulsive Hutt, are also on board the Sail Barge.

Han, Luke and Chewie are transported in the skiff to the edge of the pit, surrounded by Jabba's guards. Escape seems impossible and a plank is set up from the skiff from which the three friends will be despatched to the waiting tentacles and mucous lined mouth of the Sarlacc far below.

However, one of the skiff guards—who has been 'working' for Jabba for

some time—is Lando Calrissian in disguise. Lando is an old, old friend of Han Solo who has joined the Rebel Alliance and infiltrated Jabba's organization. As Luke is about to be prodded off the plank to his certain death, R2-D2 rockets a new lightsaber to the young Jedi from the top deck of the Sail Barge. Activating the saber, Luke turns and begins to battle his captors.

Lando abandons his disguise and fights along with Luke to free the still bound and tied Chewbacca and Han Solo. Luke leaps onto the Sail Barge and scales the sides. Leia, meanwhile, inside the barge, struggles furiously with Jabba the Hutt and eventually succeeds in strangling her new 'master' with the chain used to keep her captive. She reaches the top deck of the barge and together with Luke joins battle with Jabba's guards.

C-3PO and R2-D2 leap from the top of the barge and into the sand. The skiff is hit by cannon fire from one of the Nikto guards on board the barge. As it rocks onto its side, Lando is thrown overboard landing on the edge of the Scarlacc's pit. Han, his vision better, but still not completely restored, manages to rescue Lando and haul him back up onto the skiff.

Just as Jabba's Sail Barge is rocked by a series of explosions, Luke and Princess Leia swing across to the skiff. As the barge continues to explode and begins to burn, our heroes together with their two faithful droids steal the skiff and vanish into the desert.

Han and Chewie's ship, the *Millennium Falcon*, and Luke's X-wing fighter are waiting at a secret spot in the Tatooine desert. Luke wishes to consult with Yoda, his 900-year-old Jedi master, who dwells on the bog planet of Dagobah. Taking R2-D2 with him he sets off alone on a course to Dagobah leaving his companions to fly off in the *Falcon*.



PHOTO: RALPH NELSON, JR

Luke first met Yoda at the urging of his former mentor, Ben (Obi-Wan) Kenobi. Ben Kenobi was a former Jedi Knight who served in the Clone Wars long ago, before the rise of the evil Galactic Empire. Ben, too, had been

taught by Yoda and passed much of his knowledge of how to utilize the Force to Luke. After a duel with Darth Vader, Ben was transformed into another state, but his words and spirit return to Luke in times of danger offering counsel, hope and advice.

Yoda is a small, wizened creature whose appearance belies his immense wisdom and power. He has been teaching Jedi Knights for 800 years although he lives quietly in the simplest of mud huts on the gloomy, uncharted swamps of Dagobah. This is not Luke's first visit to Dagobah but on this occasion Yoda and the spirit of Ben Kenobi at last reveal the truth about Luke's father. Yoda tells Luke that he needs no further training, but he must face Darth Vader again in order to be a true Jedi Knight.

The Rebel Alliance conference is held on Admiral Ackbar's Star Cruiser, the *Headquarters Frigate*. Ackbar is the leader of a salmon-colored race of aliens, the Mon Calamari, and is also the Rebel

ABOVE: Luke is prodded toward the end of the plank by a skiff guard.

LEFT: Lando Calrissian in a hand-to-hand fight with a skiff guard.



BELOW: Yoda talks to Luke Skywalker about the ways of a Jedi Knight.



PHOTO: ALBERT CLARKE

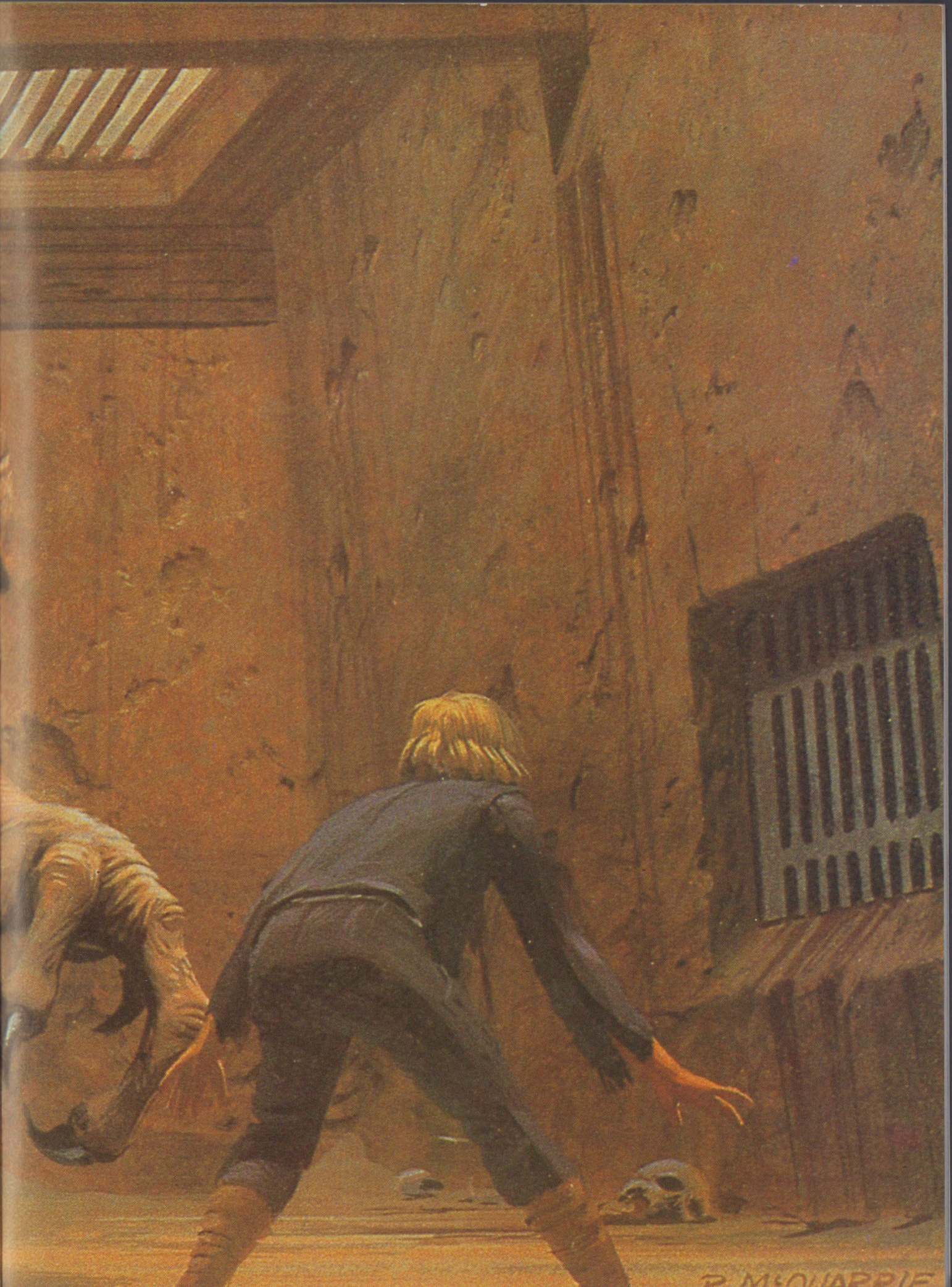




PHOTO: RALPH NELSON, JR

ABOVE: Armed for battle, Paploo pauses in the forest on the green Moon of Endor.



PHOTO: RALPH NELSON, JR

RIGHT: Luke, Han and Chewie, surrounded by hostile Ewoks after their capture in the Endor forest.

military leader. Spies have reported that the new Death Star is not yet operational, but is protected by an energy shield generated from the Moon of Endor. The Alliance has managed to steal a small Imperial shuttle, the *Shuttle Tydirium*, one of many such craft used by their opponents to transport Imperial personnel between the Death Star and Endor. The Rebels have also succeeded in obtaining the clearance code to penetrate the energy shield.

The decision is made to launch a two pronged attack, firstly to deactivate the generator on Endor and then to attack the Death Star itself. Lando Calrissian, now a general in the Rebel Alliance, will lead the attack on the Death Star in the *Millennium Falcon* – a ship which he originally owned but lost to Han Solo in a

gambling session years ago. Han Solo's strike team will concentrate on destroying the generator in the Imperial bunker on Endor.

Han, Luke, Leia, Chewie and the two droids land on the surface of Endor in the stolen shuttle. The terrain is covered with dense foliage and a dark forest of ancient, towering trees. Trekking through this forest they encounter Imperial biker scouts, and a high-speed chase and battle ensues. Luke and Leia pursue Imperial scouts on captured speeder bikes, antigravity vehicles equipped with laser cannons and capable of speeds of up to 200-miles-per-hour. Hurtling through the trees they become separated and Princess Leia is knocked unconscious. She is found by a small furry Ewok warrior, a member of a tribe of creatures who live on Endor. The

Ewok, whose name is Wicket, escorts her to his village built high up in the giant trees and only approachable by a series of rickety walkways.

Luke rejoins the others and they search for Leia, but are snared in the nets of an Ewok ambush. The Ewoks are overawed by the golden, metallic appearance of C-3PO and proclaim him a god. C-3PO is carried in state on a wooden throne to the Ewok village but his companions are tied up on poles and transported unceremoniously to the same destination. Here, they meet Chief Chirpa, the grey haired leader of the Ewok Council of Elders.

Using the Force, Luke levitates C-3PO and this 'magic' convinces the Ewoks to release him and his companions. Later, the Rebel group persuade the Ewok tribe, who are peace loving, unsophisticated creatures but formidable enemies when roused, to aid them against the forces of the Empire.

That night, Luke Skywalker knows it is time to seek out Darth Vader, to confront him again and test his

strength against the Lord of the Sith. He knows, too, that he will again test himself against the temptation of the dark side of the Force, as he did in his battle against Vader on Cloud City. Perhaps, indeed, he fears the temptation more than the might of the Dark Lord himself.

Surrendering himself to Imperial forces, Luke is escorted by Vader to the Emperor's tower, a large, dimly lit control room elevated high above the surface of the Death Star. In this throne room he confronts the Emperor, Supreme Ruler of the Galactic Empire, a small, shrivelled old man with piercing yellow eyes shrouded in the hood of a black cloak.

And now a fantastic battle begins on three fronts: Luke faces the power and malignant influence of Vader and the Emperor combined; the Rebels and tiny Ewoks on Endor meet the might of Imperial mechanized forces guarding the shield generator; and the Rebel armada begins its attack on the Empire's greatest and most powerful weapon, the new Death Star . . .



ABOVE: A Mon Calamari man.

BELOW: The Emperor in the throne room of the new Death Star.

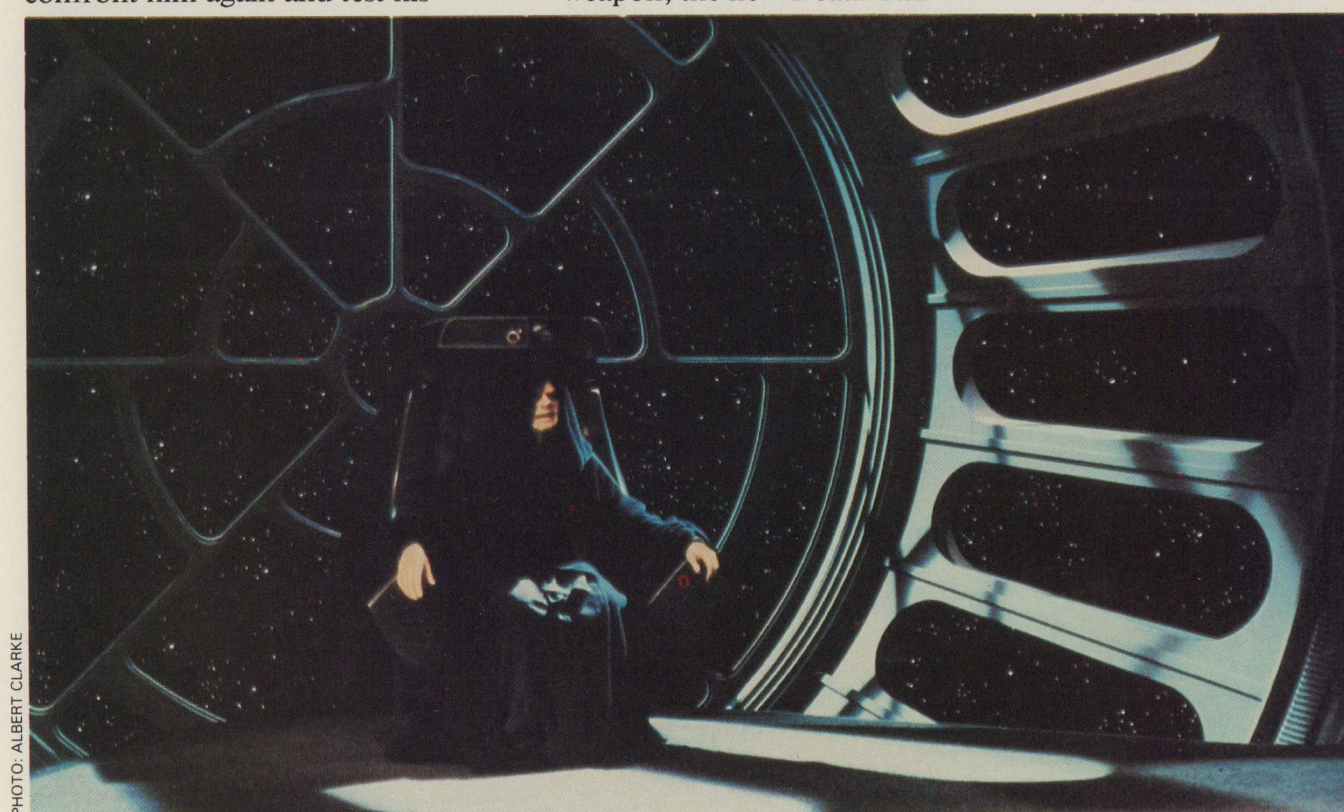


PHOTO: ALBERT CLARKE

BELOW: Princess Leia Organa in the forest on the Moon of Endor.



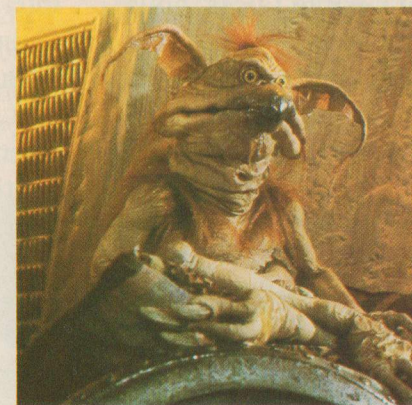
PHOTO: RALPH NELSON, JR



Part 2

PRE- PRODUCTION

*“After Star Wars and
The Empire Strikes Back,
Return of the Jedi
was to be our Graduate Thesis . . .”*



Part 2
PRE-
PRODUCTION

SOUND EFFECTS

PREVIOUS PAGE: Salacious Crumb, a member of Jabba's menagerie.
PHOTO: FRANK CONNOR

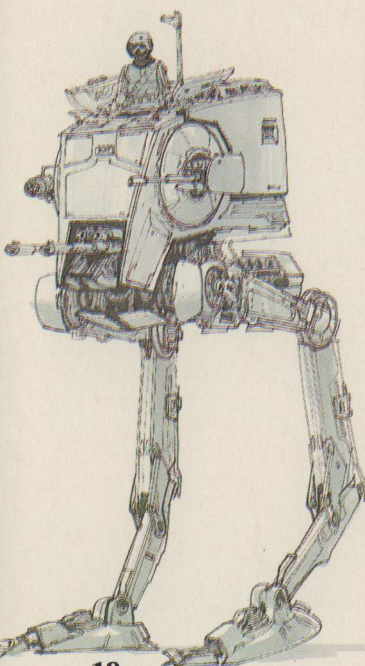
RIGHT: Logray, the Ewok medicine man and Chief Chirpa in the Ewok village on Endor. "A chanting, musical theme underlying their speech pattern. . ."



PHOTO: ALBERT CLARKE

BEN BURTT Sound Designer

BELOW: Sketch of an AT-ST (All Terrain Scout Transport).



"THE SOUND EFFECTS department since *Star Wars* has grown considerably. On *Star Wars*, nearly all the effects were produced by myself working in the basement of George Lucas' house with my tape recorders. I would stay down there all day until someone shouted "lunch" or whatever. For *The Empire Strikes Back* we did a lot of the work in Los Angeles in a sound studio. Now we're set up to handle a large volume of work in our own premises with our own facilities. But having a large department doesn't really alter the nature of the problems or their solutions.

I often find that the best sound effects come from completely unexpected places. For instance, the engine sounds for the *Millennium Falcon* come from a recording I made of a P51 Mustang, a World War II fighter, at an air show.

Probably the most difficult sounds to come up with in *Return of the Jedi* are the voices of the alien characters.

With a puppet or a mechanised model talking, you not only have the problem of trying to lip synchronize the sound and the movement, but you also have to make sure the voice performs well, interacting with an actor of, say, Alec Guinness' calibre.

But if the voices are the hardest part, then I have to say that, most often, the big action sequences come relatively quickly. We now have an enormous library of explosion noises – more than 160 of them – which is certainly more than we would ever need. But I keep on searching for the ultimate explosion. The raw material for the laser bolts and weaponry sound effects in *Star Wars* came from a variety of sources. I make expeditions to places like artillery firing ranges and missile bases just to collect sounds. Sometimes we'll hire real weapons just to record the sound of them firing and occasionally, we'll mess around with quarter pound blocks of TNT or blow up holes in hillsides or explode trees or junked automobiles. Orchestrating an

explosion, especially a big one, is a fine art and I've been experimenting with the sounds by mixing in horns and shrieks and bells to give them more variety. The big thing is, you don't just want them to go BOOOOOM.

It's always the most unexpected that's the most interesting. I went to the White Sands missile testing range once in search of good missile engine sounds. I got a lot of different missile sounds but they weren't nearly as interesting, in the end as the air conditioner in the motel where I was staying. It was malfunctioning in my room and producing a very good throb. You might find it hard to believe, but that throb has been useful in constructing many of the large ship noises in all the *Star Wars* movies.

There are two interesting language problems in *Return of the Jedi*. The language of the Ewoks and the language spoken in Jabba the Hutt's domain. I suppose if anything, the Ewok language is closer to Tibetan or some other exotic language from that part of the world. They do a lot of chanting and there's a musical theme underlying their speech pattern. For the Ewoks, it was a matter of coming up with something that would give characterization and show their



LEFT: A giant Gamorrean guard, one of Jabba the Hutt's personal palace guards. Ben Burtt had to help create 'Huttese', the language spoken by most creatures in the palace.

PHOTO: ALBERT CLARKE

emotional state of mind in any particular scene. Huttese, on the other hand, (which is the language spoken by Jabba the Hutt and his cohorts) was certainly the biggest challenge for us on *Return of the Jedi*. Alien languages and creature sounds are the one area in our particular department that George Lucas pays very close attention to. He always wants to be sure that they represent the right kind of characterization and performance."

BELOW: A painting by Ralph McQuarrie of a space battle scene near the Death Star. To create the sound effects for such action sequences Ben Burtt and his team can draw on an enormous library of 160 different explosion noises!



CREATURE MAKING

HOWARD
KAZANJIAN
Producer

"EIGHT months before we even had a script, George Lucas came to me and said: "Howard, we are going to have a lot of creatures and monsters in this picture, so you should start setting up a creature shop now." We started looking for the top people in creature making, people like Dick Smith in New York and so on. In this search, I discovered that we had some marvellous and very talented people at ILM (*Industrial Light and Magic*) like Phil Tippett who worked on the Stop Motion sequences for *The Empire Strikes Back*.

The very first creature to be designed was Jabba the Hutt, which Joe Johnston (Visual Effects Art Director) had already done. Then Phil was made the head of our Creature Department and he assembled a team to create prototype designs of dozens and dozens of small creatures. George (Lucas) would stop by once a week to

check out the prototypes and suggest some modifications and these would be sent for re-sculpting. Months later we assembled all the clay and plaster models and put them on an A-list or on a background B-list. Out of about eighty different characters we decided to go with about half of them. We took a warehouse directly across the street from our offices, equipped it from top to bottom and Phil and his team got down to the real work of making these creatures. Most of them were created before we knew exactly what we were going to do with them.

At the same time in England, Stuart Freeborn, who had built Yoda for us in *The Empire Strikes Back*, was setting up shop. Joe Johnston and Phil developed sketches and models of the Ewoks. Stuart was brought to the U.S. for meetings and returned to begin making 80 Ewoks. As Stuart worked on prototypes, he would send us samples to check out, together with

short video clips in order to give us a visual feel. There was a lot of interaction and cooperation between the teams creating creatures in the US and England. Frankly, I'm amazed at how smoothly the creature making proceeded what with the difficulties inherent in having two teams working simultaneously, on two different sets of costumes - thousands of miles apart."

"ON RETURN OF THE JEDI as far as creature making and Stop Motion Animation are concerned, we have taken everything we've learned and used it to the maximum. It was George Lucas' intention to combine our experiences from *Star Wars* and *The Empire Strikes Back* and bring it all together for *Jedi*. This was to be, in a sense, our Graduate Thesis.

George felt that a lot of the creatures in *Star Wars* looked like something from an Egyptian hieroglyphic panel. We made a conscious effort on *Return of the Jedi* to make things look a lot more alien. We were concerned that they be less animalistic and more unearthly. We stole a lot of design elements from real animals, of course, but even these elements were constantly re-arranged to avoid coming up with something that looked like a zebra crossed with a giraffe.

Except in the case of the Rancor monster, there were really no drawings or designs to go on. Our department was very much given carte blanche. The continual danger was that the team would start to fall into a rut. At that point George would suggest that we completely change our approach. So, off we'd go on another tangent and in a month or two, the whole process would repeat itself.

In the end, no matter how technically proficient we become at

PHIL
TIPPETT
Creature Design
Supervisor

TOP, ABOVE, BELOW:
Development sketches by
Ralph McQuarrie on the
Rancor Monster, Jabba
the Hutt and a creature
guard. LEFT: A costume
sketch by Nilo Rodis-
Jamero.

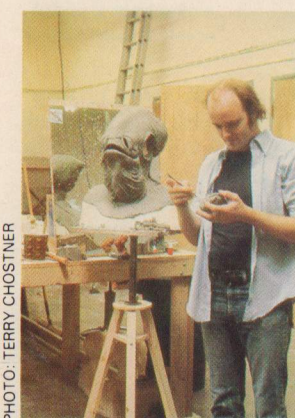


PHOTO: TERRY CHOSTNER



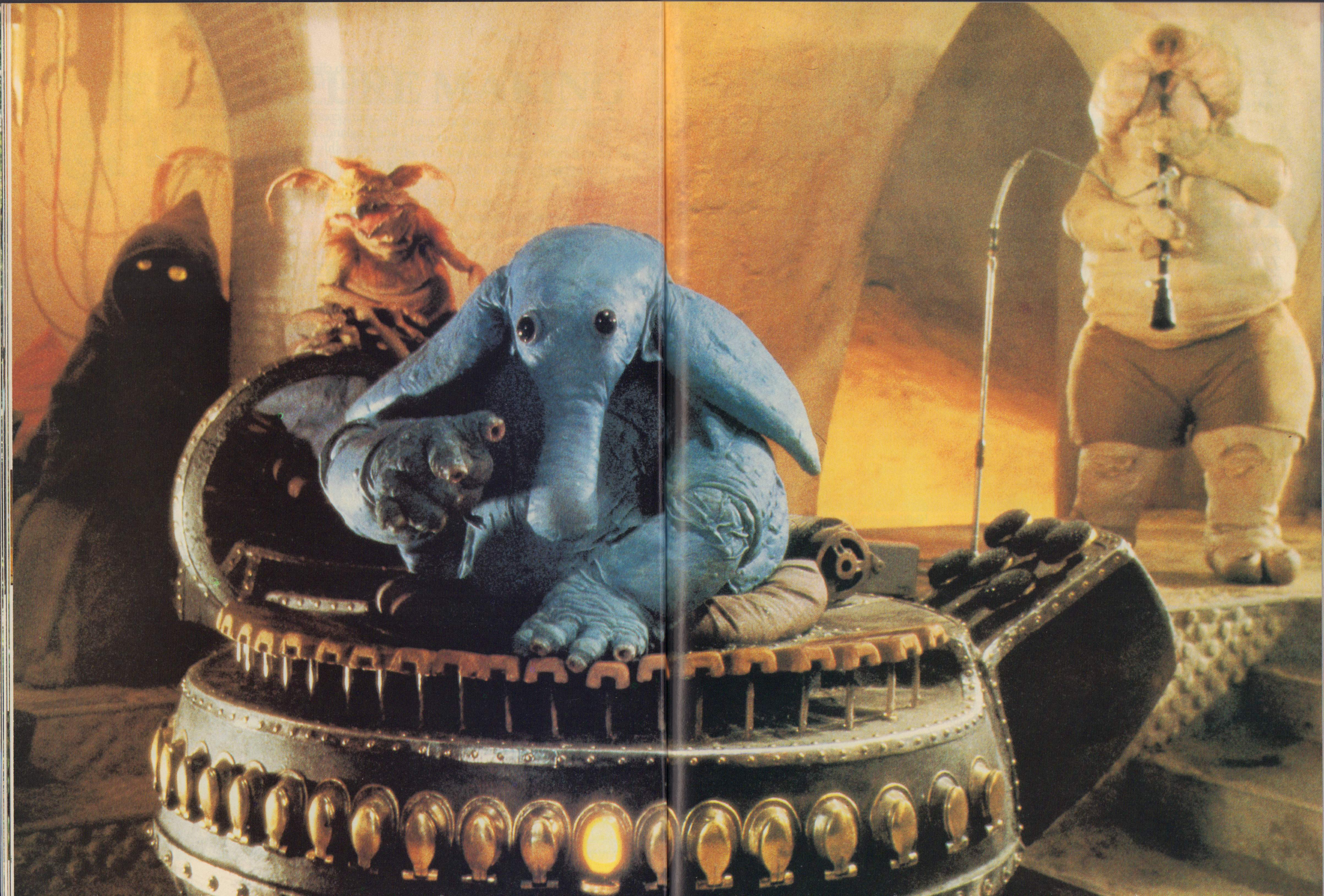
PHOTO: PATTY BLAU



PHOTO: ALBERT CLARKE

TOP: Creature design supervisor, Phil Tippett, sculpts the prototype of a Mon Calamari. ABOVE: Tippett paints a head that will form part of a Mon Calamari costume. RIGHT: The end result. Admiral Ackbar, leader of the Mon Calamari and Rebel military leader, monitors the rebel forces in their attack on the Death Star.





PREVIOUS PAGE: Max Rebo, keyboard player for the musical trio that performs in Jabba's throne room.

sculpting pieces of rubber, the character of any creature is almost totally dependent on the film making. It's people like George Lucas and Ben Burt (Sound Effects) who actually imbue these creatures with life and character."

Rancor Monster

PHIL
TIPPETT
Creature Design
Supervisor

PHOTO: KERRY NORDQUIST

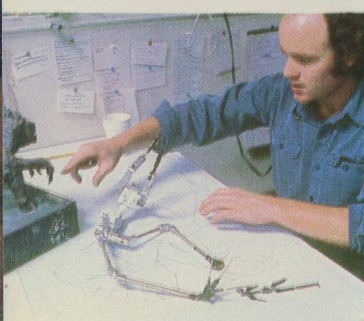


PHOTO: KERRY NORDQUIST

ABOVE RIGHT: Creature Design Supervisor, Phil Tippett, experiments with movement in the foam rubber costume of the Rancor. The costume was eventually abandoned. TOP: Painting the Rancor puppet. ABOVE: Phil Tippett checking the blueprints of the Rancor puppet with the armature that goes into the puppet.

"PERHAPS I could illustrate the degree of co-operation that goes into producing a single creature on a movie like *Return of the Jedi* by going into a little detail on a typical example like the Rancor monster. George had an idea pretty early on that there was going to be some sort of monster in a pit. I don't think he knew exactly how this was going to relate to the final story because it hadn't been written yet. Joe Johnston did a sketch of something that resembles the final Rancor monster, and from that I worked on sculptures and elaborated on it and finally came up with an approved design.

But knowing what a creature will look like doesn't always help you to figure out how it's going to be operated. At one point, George was quite adamant about using a guy in a costume, so we gave it a try and built a life-size outfit. But the features of the monster had to be so compromised to allow a person to fit into it, and his movements were so limited, that we finally abandoned this plan. Frankly, it ended up looking too much like a man in a suit and in any case, it was virtually impossible for him to move.

As an alternative, we proposed creating a monster rod-puppet. Conditions on this sequence were ideal for using a puppet because the lighting was so dim, and because the Rancor is supposed to live in a pit. We had three puppeteers working the Rancor, one of



PHOTO: KERRY NORDQUIST

whom was myself.

Coordination now became the main difficulty. I would handle the body movements with a colleague on the arms and another on the feet. We found ourselves in a situation where we virtually had to communicate by telepathy, and the situation was complicated further by the decision to shoot the Rancor at 72 frames a second instead of the normal 24 frames a second. By shooting at three times normal speed and slowing the projection down later, we were trying to give a feeling of solidity and weight to the creature. But it meant that we had to move very, very quickly. Coordination would have been difficult enough with just one puppeteer. Having the three of us necessitated shooting enormous quantities of footage in the hope that we would finally can 50 or 60 frames of film that looked adequate.

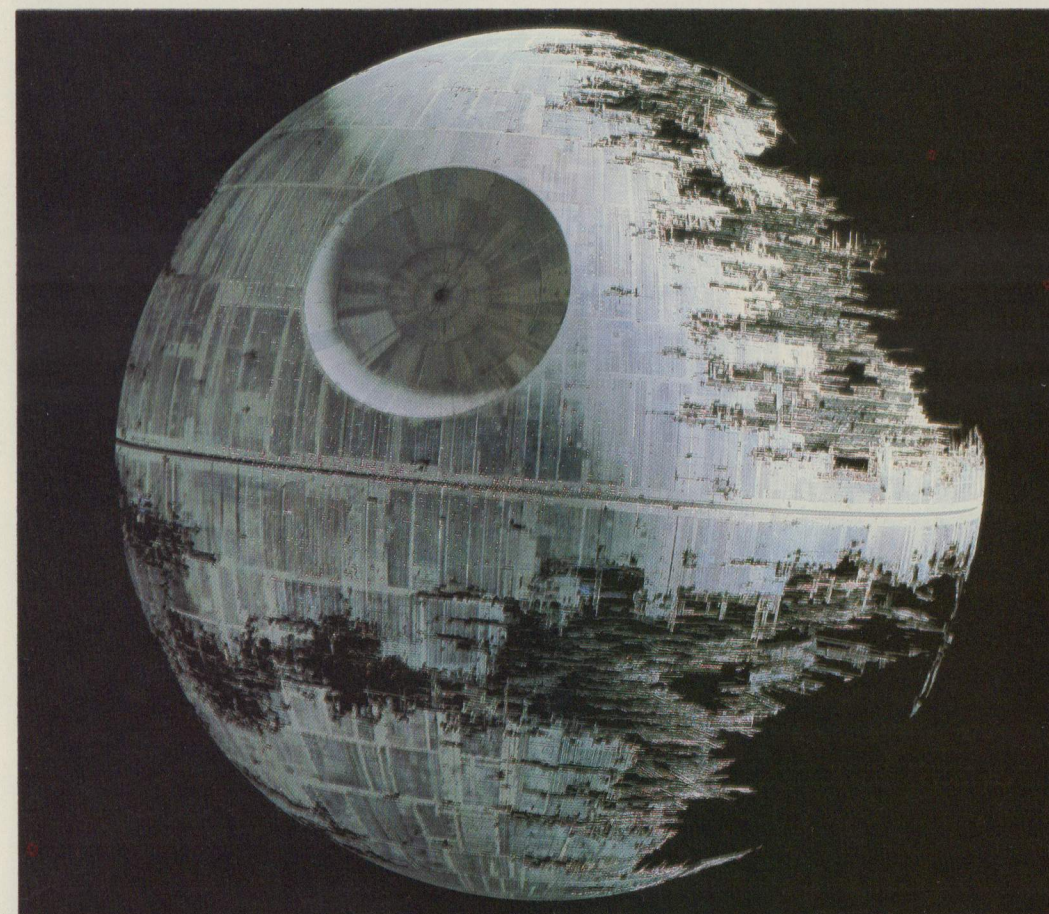
In *Return of the Jedi* we learned a lot about puppetry and how to manipulate things in real time with a puppet working with the live action unit.

Whatever process one uses it always comes down to choosing just the right moment out of hundreds of yards of film, to find the perfect 15 or 20 frames. Then it's down to the sound effects and editing to make that creature into a living, breathing entity."

STAR WARS
RETURN OF THE JEDI

SCRIPTING

Part 2
PRE-
PRODUCTION



LEFT: The new Death Star under construction. The creation of a new Death Star plays a central role in the plot of *Return of the Jedi*. This model was made by Bill George, Lorne Peterson, Larry Tan, Barbara Gallucci and Barbara Affonso at Industrial Light & Magic.

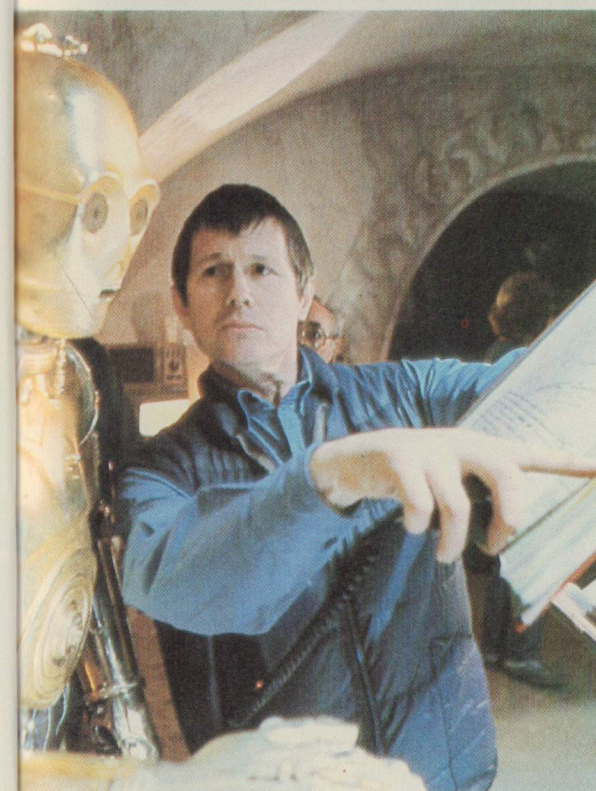


PHOTO: GARY KURTZ

"MY PERSONAL VIEW is that *Return of the Jedi* is a bigger and more challenging movie than *Star Wars* and *The Empire Strikes Back* put together. It certainly has as much action as the other two combined and, more importantly, all the major plot lines and the questions raised in the first two movies are finally resolved.

George Lucas did a first draft screen play - one he sort of doesn't admit doing - which laid down the plots, story and characters. It wasn't quite resolved in the last fifth of the movie, but we all knew what was happening. There were four of us involved in the script conferences: George, Richard Marquand, Larry Kasdan, who wrote the script for *The Empire Strikes Back*, and myself.

HOWARD
KAZANJIAN
Producer

LEFT: Even C-3PO, despite being able to translate millions of galactic languages, needs a helping hand with the script from Director Richard Marquand.

RIGHT: *Luke Skywalker and Darth Vader in the Emperor's throne room.*

In the summer of 1981, the four of us spent six full days, from 9 am until we went home at night, discussing the story and the characters and learning more about their history. We had to know where Darth Vader came from. We *needed* to know about Luke and his parents.

Although all of that information may not be used in this picture, understanding where Luke, Vader and Obi-Wan come from, is vital. That way, when you're down on the stage and an actor asks, "Can I do this?" or "Could I give this line?" you can say "No" because you know the change would violate something which has already happened but that's not actually in the *Jedi* script.

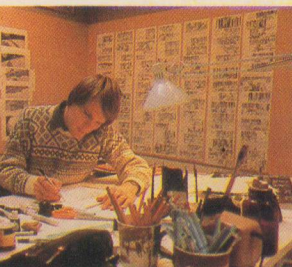
For example, we had to tell the audience not only who Darth Vader is, and whether or not he is Luke's father or not, but we had to set that piece of information, and many other events,



PHOTO: RALPH NELSON, JR

PHOTO: ALBERT CLARKE

in the historical perspective of the entire *Star Wars* story. Story is the first and most important element in film-making. Without a first rate script, all you have is special effects, color film, sound, music and an unsatisfied filmgoing audience. Once you have the script, then you move forward."



ABOVE: *Visual Effects Art Director, Joe Johnston, sketching story boards for special effects shots.*

PHOTO: TERRY CHOSTNER

BELOW: *Luke Skywalker, his lightsaber raised overhead, duels with Darth Vader inside the Death Star throne room.*
PAGE OPPOSITE: *The Ewok warrior, Teebo, in the forest on Endor.*

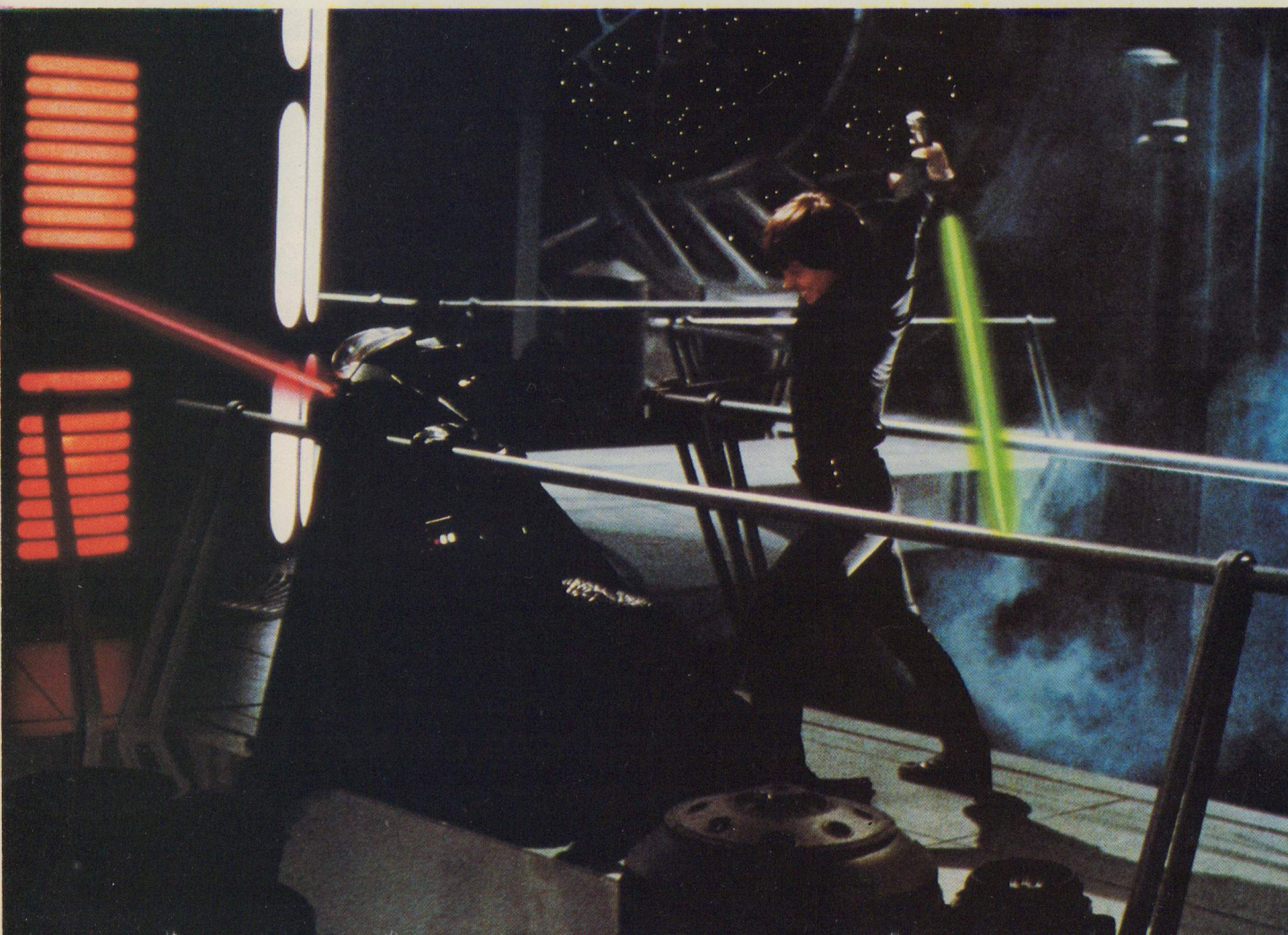


PHOTO: ALBERT CLARKE



RICHARD MARQUAND
Director

“I F THERE IS ONE thing that I have learned from working on *Return of the Jedi* it is, simply, that the story is what really counts.

There have been a lot of directors and studios who have been misled by the success of *Star Wars* into thinking that special effects are everything. They're not. Special effects have their place – and a very special place – in the *Star Wars* saga. But first and foremost comes the story. Word of mouth is the most powerful and effective advertising medium for any movie and nobody is going to tell their friends to go and see a movie where the storyline is boring or pointless, no matter how good the special effects are.

What we have here, in the *Star Wars* saga, is one of the greatest stories ever told.”

HOWARD KAZANJIAN
Producer

“THERE WERE only three full scripts in existence for *Return of the Jedi*. All of our actors, even David Prowse, only received *their* particular sections of the

script.

We know from research that *Star Wars* fans don't want their enjoyment spoiled by the secrets of the plot being revealed prematurely. There are a number of ways in which we kept the threads of the plot from leaking out. Although we normally have a crew of between 100-150 people standing around on the set, at a particularly sensitive point in the story development, we might only have four or five people involved in the filming. And those four or five people would be replaced by another small group of actors when the next secret was let out of the bag. And sometimes, and this was especially easy with a character like Darth Vader, who is speaking behind a mask, we would have him saying nothing at all on the set and then dub the appropriate lines in later.

There is one shot at the end of *Return of the Jedi* which was only dropped into the film at the very last minute. It isn't a question of secrecy for its own sake. The story was so important we *had* to protect it.”

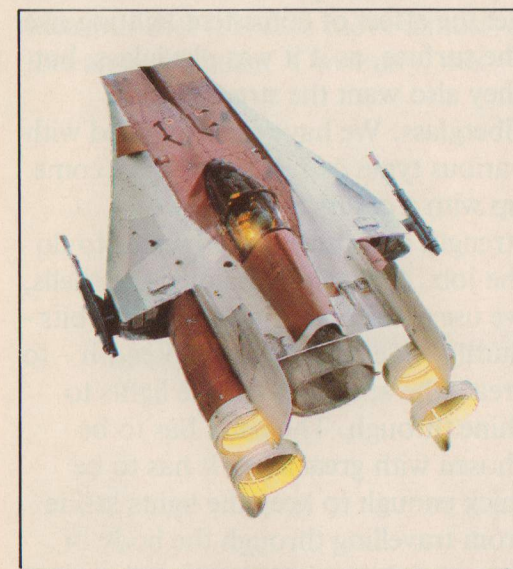
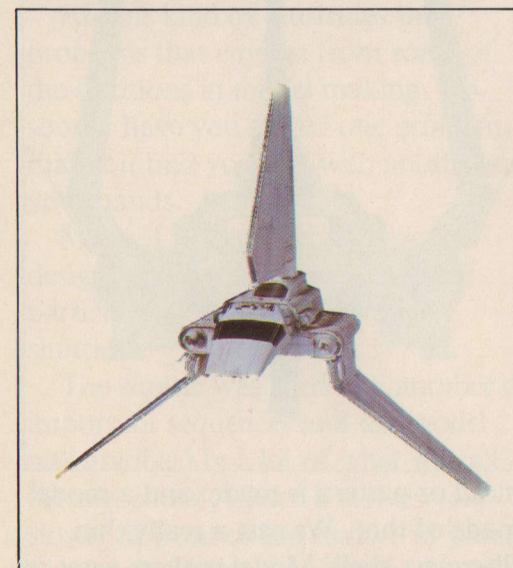


RIGHT: On the top deck of Jabba the Hutt's Sail Barge, Luke Skywalker brandishes his lightsaber. An exciting sequence in "... one of the greatest stories ever told!"

PHOTO: RALPH NELSON, JR

MODEL MAKING

Part 2
PRE-
PRODUCTION



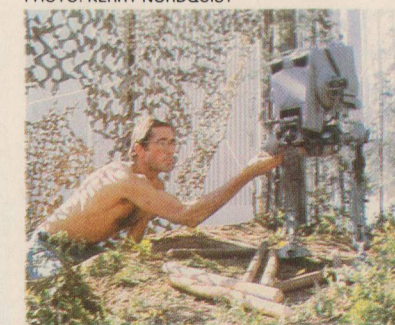
“THE AT-ST (All Terrain Scout Transport) walkers went through a lot of phases in the model shop. We built one large 3-foot high version of an AT-ST which took a considerable amount of time and a lot of effort to construct. For the scene where the Ewoks attack an AT-ST walker we had to come up with a technique that would realistically show these apparently massive redwood logs crushing the head of an enemy walker. First, we made two miniature redwood logs about six inches in diameter and filled them with lead. In the movie the Ewoks cut the ropes on swings supporting these logs and trap the AT-ST in between. For the sake of realism, the head of the model walkers we wanted to crush had to be made of metal. We made a mandrill or core, out of plastic which was shaped like the head of the walker.

Then we had these mandrills plated with an incredibly thin layer of metal. In fact, they were plated with nickel just one 15,000th of an inch thick. The plastic of the mandrill is eaten away with acid and what was left was a really beautiful-looking walker head made of thin nickel. Because they were built of sheet metal, even at one 15,000th of an inch thick, it could stand by itself and didn't need any internal support. It crushed beautifully. An intensely realistic effect.

There was a lot of work involved in modelling the series of new ships for this movie. The B-wing fighter, a Rebel vehicle, was particularly interesting. It's a long, knife-bladed like ship which flies with the blade pointed down and the cockpit positioned where the hilt would be on a knife. The

LORNE PETERSON
Modelshop
Supervisor

PHOTO: KERRY NORDQUIST



ABOVE: On an outside miniature forest set at Industrial Light and Magic, Visual Effects Supervisor, Dennis Muren and his crew prepare a shot using the three foot high model of an AT-ST.

TOP LEFT: A model of an Imperial shuttle, a vehicle used to transport Imperial personnel. The model was designed by Joe Johnston and Ralph McQuarrie and made by Bill George and Charlie Bailey at ILM.

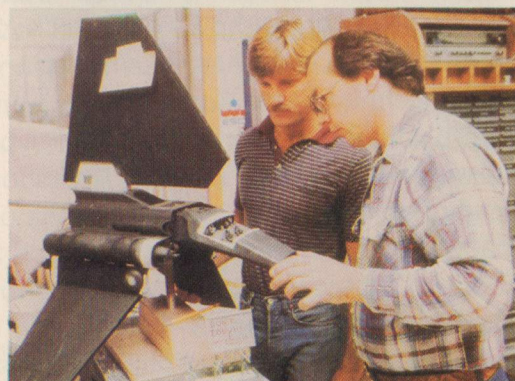
MIDDLE LEFT: A model of an A-wing fighter, a wedge shaped Rebel fighter spaceship used in the attack on the new Death Star. The model was designed by Joe Johnston and made by Wesley Seeds and Lorne Peterson at ILM.

BOTTOM LEFT: A model of a B-wing fighter, a small 3-winged Rebel fighter spaceship whose wing assembly rotates around the cockpit. The model was designed by Joe Johnston and Bill George and made by the latter at ILM.

RIGHT: George Lucas inspects the not yet completed Death Star model.



FAR RIGHT: The completed model with mechanized landing gear and wing action.



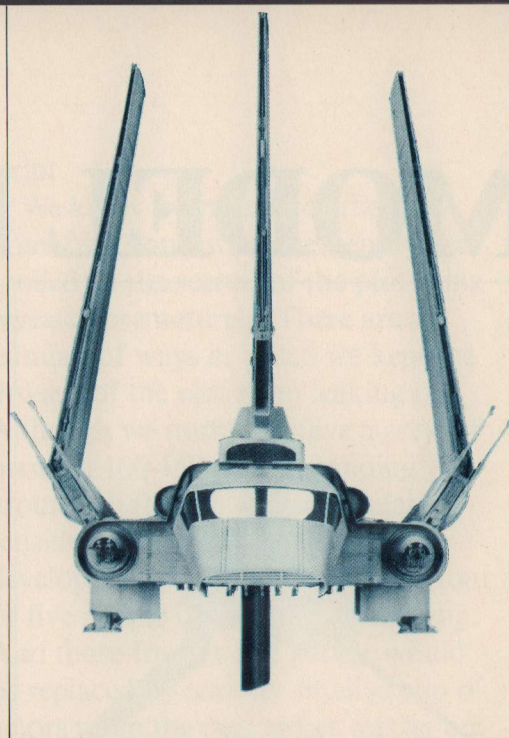
RIGHT: ILM modelmakers, Charles Bailey and Bill George working on the Shuttle prior to painting.

cockpit rotates, the wings are maneuverable and it may even be called a B-wing because of its resemblance to a blade.

And that wasn't the only oddly shaped vehicle we modelled. We built an eight foot long model of Admiral Ackbar's Star Cruiser. This was a rounded design that resembled a flying pickle with warts and bumps all over it. Usually, our ships are more angular, like the familiar 'wedge pie' Imperial cruisers. The upper limit on the size of models that we can work comfortably with is dependent on the weight of the model itself.

If they're too heavy they start to bend the pylons they have to stand on for bluescreen shots. And another problem with large models is lighting them internally. This internal lighting gives a sense of scale but it creates too much heat so we use fans and compressors to run cooling air into the models.

When we build a model ship we start out by making a light aluminum armature, with honeycombed aluminum supports. Eventually, a



mold or pattern is made, and a model made of that. We cast a really thin fiberglass shell. Model makers want to get the effect of consistent lighting over the surface, as if it was plexiglass, but they also want the strength of fiberglass. We have experimented with various types of resins and have come up with a compromise between strength and finish which seems to do the job. After we've painted the shells, we use the tiniest imaginable drill bits – hardly wider than a hair's breadth – to create the apertures for the lights to shine through. The paint has to be chosen with great care. It has to be thick enough to keep the lights inside from travelling through the body of the paint, but thin enough so that you can drill tiny pin holes all over it without it cracking or flaking.

And, by the way, I'm talking about hundreds and hundreds of little holes – not just a few dozen.

We use neon lighting inside the ship virtually all the time because it is one of the coolest of lights. The camera people wish we could use Halogen lights because they're brighter and take much less time to shoot. But even if the Halogens were really tiny, the model would get so hot, you could cook a turkey on it. Of course, we could solve that. We could cool the

models by using liquid nitrogen, but that would mean bringing in another order of technology altogether.

All this kind of illustrates the problems that emerge from some of the solutions in model making. No sooner have you solved one problem, that you find yourself with another on your hands.

Most of the new vehicles were designed by Joe Johnston and one particular beauty is the Imperial shuttle.

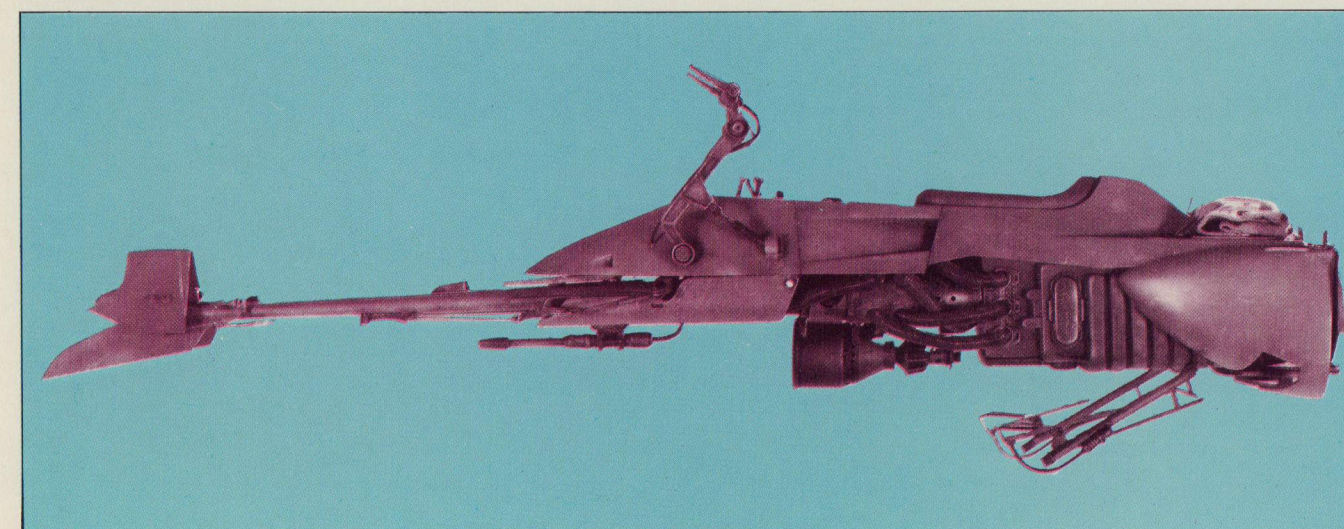
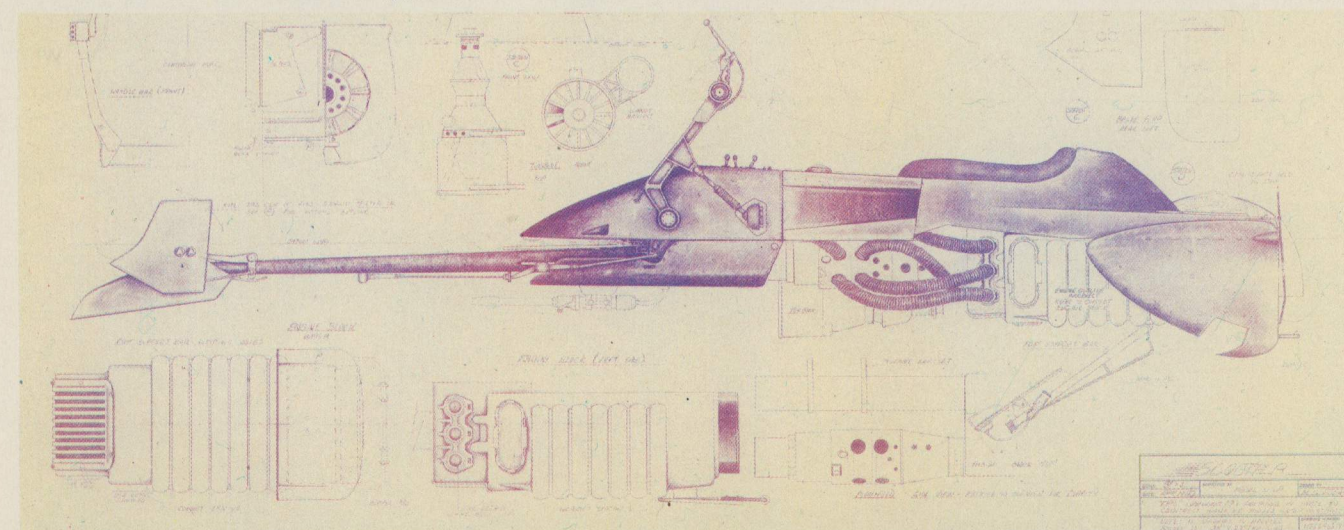
The shuttle was used in a number of important sequences and the model was involved in a lot of what we call 'beauty shots', where it arrives very slowly in front of the camera or passes over the camera, in a graceful arc. The idea was that it had to move almost like an aerial ballet. Obviously, this

particular model was going to be scrutinized by the audience so Charlie Bailey, who is kind of our resident mechanical genius in the model shop, spent at least a month and a half working on it. Since the wings of the shuttle fold up and the landing gears go up and down and they are all geared together – this, remember, is a model that has a wing span of 3 feet and a core that's only about three inches across – the mechanisms inside the shell were very complex. And they all had to be geared very precisely or the wings would have snapped off.

The shuttle was a really tough assignment with incredible detail, right down to the working lights on the wing tips. Even though I'm a model maker, I could really believe in that ship when I saw it on the screen."

FOLLOWING PAGES:
Prisoners Han,
Chewbacca and Luke
aboard one of Jabba the
Hutt's desert skiffs.

BELOW: Blueprints and a
finished model of the
speeder bike. Designed by
Joe Johnston and Nilo
Rodis-Jamero, the speeder
bike model was made by
ILM modelmakers Mike
Fulmer, Ira Keeler and
Mike Cochrane.





THE EWOK SAGA

Choosing Ewoks

HOWARD
KAZANJIAN
Producer



ABOVE: Sketch of baby Ewoks.

BELOW: Production painting by Ralph McQuarrie showing C-3PO being hailed as a god by the Ewoks and carried on a wooden throne through the Endor forest.



PAINTING: RALPH MCQUARRIE

"IN OCTOBER 1981, we conducted some Ewok tests in London using an earlier version of the suit that eventually became the final costume. It was apparent to us that dwarves would play the parts of Ewoks much better than midgets would. The midgets looked like men in suits but the dwarves aren't so symmetrically built. Some have different lengths of arms in relation to body length, and so on, and this made them more believable as an alien life form. But there were drawbacks. Dwarves don't walk or climb ladders as easily as midgets, so they required more rehearsal time and it took additional months to fit each costume to the individual. But they were the best bunch of people to work with that you can imagine.

Body casts had to be made for each person for the arms, the chest, the legs, and the entire body. We constructed forms to put the fur on, and of course, we had to make casts for the heads. In

fact, each finger and each fingernail were made separately. And then there were the shoes. . . . We have photographs from the costume department, of 50 or 60 casts of feet, all standing on table tops ready to be worked on for the little booties.

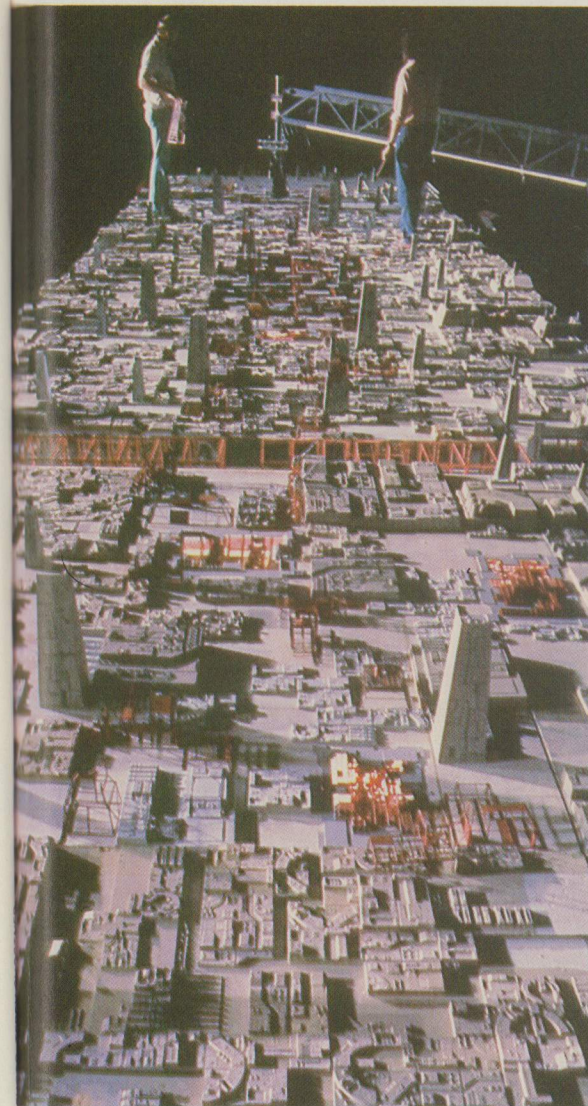
Eventually, we discovered that the soles of the booties were too hard and that the little people couldn't feel the terrain they were walking on. As one of the sets was 30 feet off the ground, we had to re-make all the booties. It would have been too dangerous otherwise. It certainly wasn't much fun being an Ewok, either at Elstree or in the forest while we were shooting *Return of the Jedi*. Every so often, on the set, we had to peel them out of their suits and take off their specially designed sets of underwear, because they would be soaking wet, and send them (the underwear, not the Ewoks!) off to the laundry, while they put on a spare set. I have a lot of respect for their endurance."

ILM MODEL SHOP

The Death Star Tunnels

"BUILDING THE SET which showed the surface of the Death Star and the tunnels leading to its interior, meant creating a series of trenches and tunnel sections that were over 72 feet long.

We used several different sizes of tubes because we wanted to create three distinct tunnel types. Tunnel one, the entrance to the Death Star, is a straight drop shaft, carrying the girder work of the surface of the Death Star down to the first level of the tubes. This first section was basically a mass



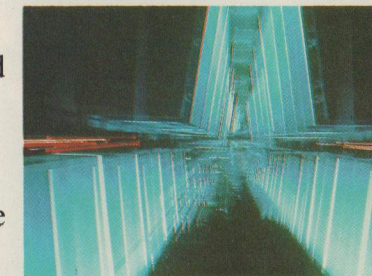
of girders and bits and pieces of cardboard tubing, enhanced with $\frac{3}{4}$ inch sprinkler pipe, mirrors, and grid work made from small sticks of pine wood. To the camera, it looks like an endless stream of grid work, when actually, it's only 2 feet high, 4 feet wide, and 72 feet long.

In tunnel two, things get really small. There was only just room for the model ships to fit in there. We used cardboard tubes 2 feet in diameter, $\frac{3}{4}$ inch thick, and lit everything with 2 feet long fluorescent tubes (yes, your familiar shelf lighting), and painted the tube interiors with house paint.

We were a little more adventurous with colors on the surface of the Death Star this time around, although as we got to the deeper parts of the interior, we went back to the familiar gray. To facilitate shooting in tunnel two, as with tunnel one, we lifted off the ceiling sections as the camera lens passed through. Tunnel two was all twists and turns and of course a number of the Rebel ships don't make it once they are inside there. It's a very exciting sequence in the movie, and even though I was involved in building it, I get vertigo when I see it on the screen! Tunnel three was a long and skinny tunnel, so we designed it to split down the sides as the camera passed along, instead of lifting off the roof-top sections. And over the 72 feet of this tunnel, we had it arc about 2 feet. So instead of a straight line run, it curved. All this leads to the reactor chamber of the Death Star, which is quite spectacular. It is a sort of internal Grand Canyon, built of cardboard tubes, light sticks, sprinkler pipe, fluorescent lights, and mirrors."

STEVE
GAWLEY
Model Shop
Supervisor

BELOW: A shot speeding down the Death Star model tunnel No. 3.



ABOVE: The Death Star model surface-to-tunnel set up. The Vista Cruiser Camera will first move along the surface (vertically mounted) and then enter the opening, trucking down the tunnel (parallel to the camera track).

PHOTO: TERRY CHOSTNER

LEFT: The model Death Star surface with the Vista Cruiser Camera boomed over the set. The camera will truck the full length of the sixty foot set to simulate flying low over the surface.

FOLLOWING PAGE: Darth Vader awaits the arrival of the Emperor on the new Death Star.

PHOTO: ALBERT CLARKE

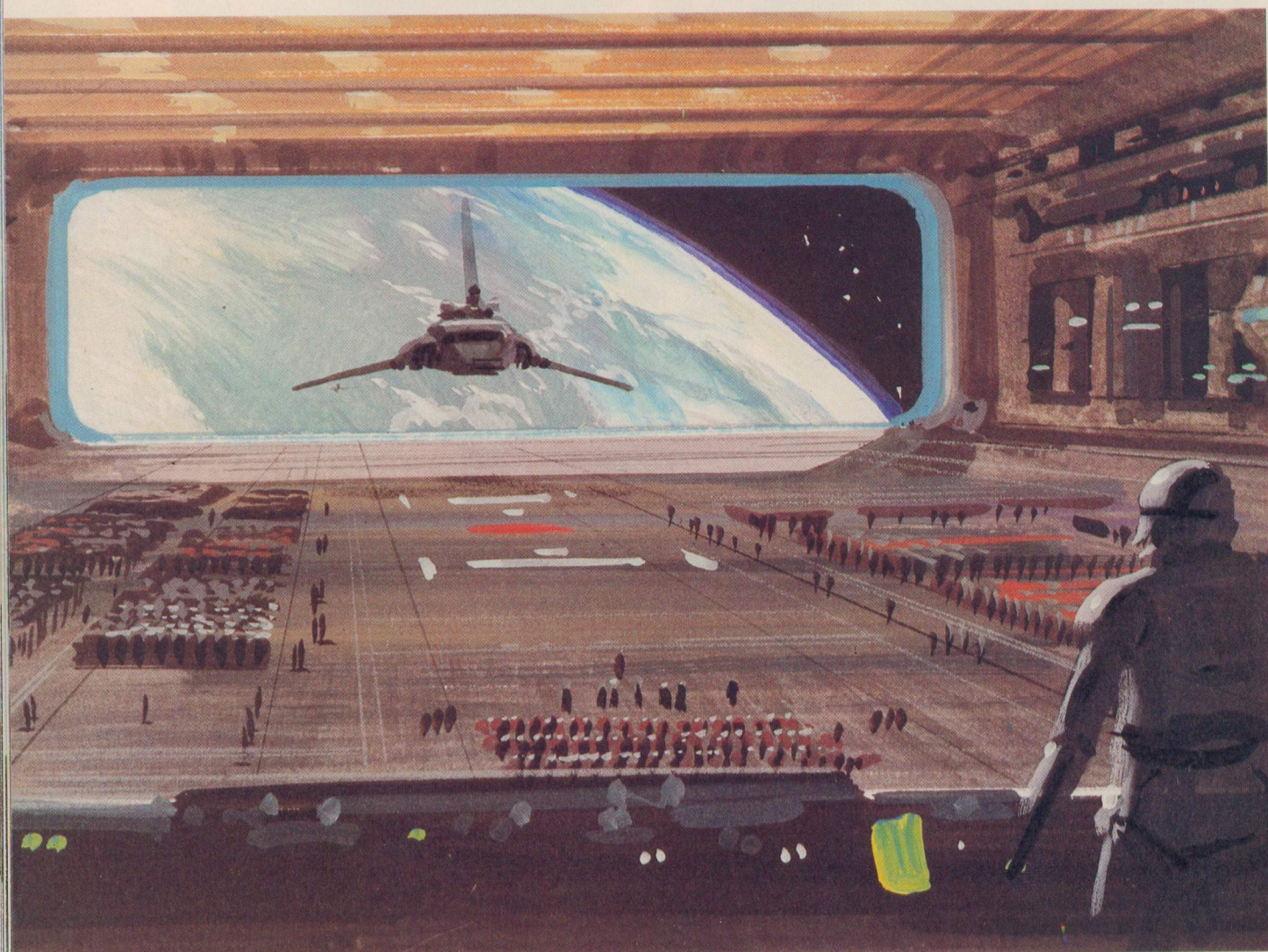


Part 3 ON LOCATION

“There was a little nervousness when we discovered a bear was in the vicinity . . .”



ELSTREE STUDIOS, ENGLAND



**RICHARD
MARQUAND**
Director

ABOVE:
Sketch by Ralph McQuarrie
of the main docking bay of
the Death Star.

PREVIOUS PAGE: A baby
Ewok.

“WE HAD A HUGE variety of sets to work on in England. In a sense, the biggest set we actually worked on was barely a set at all. It was the Death Star main docking bay. Now, it was built on the *Star Wars* stage at Elstree, which is the largest stage in England, in Europe and maybe even the world. It is a huge place. It offered an environment that would be a real challenge to any director.

We had an Imperial Shuttle built, the very bare bones of what we could

physically deal with. Half the walls of the docking bay were in place and there was nothing else at all except acres of black drapes. What was so exciting for me was that I'd never worked before with such a slight of hand because of course, in the final version of the movie, the rest of the set would be painted in along with the animation work and the super impositions from ILM. But on that particular set I had the feeling sometimes that we were creating theatre rather than making a movie.”



PHOTO: RALPH NELSON, JR

“THE VERY FIRST scene we shot at Elstree took place on a stage which was transformed into a very strange, severe environment. I was following some other characters but my suit does not allow for very good vision. I was in the middle of this big scene and suddenly noticed that I'd walked directly towards a technician holding a clapperboard. I thought I was dreaming! I was so shocked that I continued to walk and just fell over. It was a fiasco. When I do fall over, it's like slow motion inside that suit. God knows how I haven't killed myself.”

**ANTHONY
DANIELS**
C-3PO

“THE BREATHING problems for our actors in the creature suits first showed up on the sets at Elstree.

One of our scenes had about thirty creatures in it. Some of the heads take up to twenty minutes to put on and the head could only stay on that individual for one or two minutes. At the end of the take, no matter how good or bad the take had been, the head had to come off just to allow the person to breathe.

Try to imagine the confusion and chaos in a scene with twenty or thirty creatures on a set accompanied, of course, by twenty or thirty wardrobe people. For some of the creatures the heads hadn't even been designed to come off and the creature handlers would stick hair blowers, turned on full cold, into the mouths of the masks so the actors inside could breathe. It got so bad that eventually we decided to build battery packs for the wardrobe and creature handlers so that they could carry their individual hair blowers like a gun in a holster. Gamorrean guards had their mouths propped open with a 5" stick between scenes.

This sounds crazy, but the danger of asphyxiation was very real. I've seen a

**HOWARD
KAZANJIAN**
Producer

few strange sights on sets in my time in the movie business, but few were as strange as watching two creature handlers on their hands and knees, pouring cold air from a hair blower up the mouth of a terrifying looking alien creature. Some of those actors inside the suits deserved medals."

RICHARD MARQUAND
Director

"I THINK PERHAPS the most difficult set we had to deal with at Elstree was Jabba the Hutt's palace and throne room. This was a complete environment with four walls and it was surrounded by dark nooks, crannies, doorways, blind alleys . . . virtually a real building.

The orchestration required to get all of the actors, actresses, creatures, creature handlers, and technical crew in exactly the right place at exactly the right time – to even stand a chance of getting a decent shot – was monumental. And being a real, three dimensional environment, there was no way that one could walk off the set to overcome claustrophobia or just to clear your head a little. And in fact the worst place of all – and the hottest – even worse than on location in Yuma, was the interior of Jabba's Sail Barge in Elstree. It was an absolute nightmare. It's going to be a long time before I forget those endless days we spent shooting the barge scenes at Elstree on Stage 5."



PHOTO: FRANK CONNER

arms. TV monitors were placed inside Jabba in positions where the operators could view them, and the shooting camera was connected to a video camera feeding into these monitors. This gave the operators instant feedback on their performance with the various parts of the creature, and two additional operators outside operated the eyes by remote control. But to build sets from scratch that can accommodate this kind of activity is a very expensive business. For example, that particular set – Jabba the Hutt's throne room – cost as much money to build up six feet off the ground as it did to build and complete the whole of of the set.

I know that a lot of people came away from *Star Wars* with the Cantina scene burned into their minds, even though that scene was only a tiny part of the movie. In *Return of the Jedi* we have creatures literally spread out all over. Specially constructed sets at Elstree have allowed us to sprinkle weird and exotic looking creatures anywhere we chose in the story rather than concentrating them in one or two scenes."

ABOVE RIGHT: Sy Snootles, the lead singer for the musical trio at Jabba the Hutt's palace.

HOWARD KAZANJIAN
Producer

"MANY OF THE SETS at Elstree had to be designed to accommodate people hidden in the floors, the ceiling and behind the walls. These people were operating the creatures. For example, Sy Snootles was operated by two men under the floor and one on the catwalk, using marionette strings. In that same set we also used three operators actually hidden inside of Jabba the Hutt. One was in the tail and two were in the front manipulating the head and the

PAGE OPPOSITE: The most notorious bounty hunter in the galaxy, Boba Fett, aims his deadly laser rifle on board the skiff. Boba Fett is equipped with wrist lasers, rocket darts and a backpack which enables him to fly.



PHOTO: RALPH NELSON, JR

YUMA, ARIZONA



PHOTO: RALPH NELSON, JR.

HOWARD KAZANJIAN
Producer

ABOVE: Filming aboard the stationary Desert Skiff, which was about eight feet off the ground, on location near Yuma, Arizona. Jabba the Hutt's Sail Barge is in the background.

“BUILDING the set at Yuma was an enormous project. It took five months of construction during which time we also had to supply lodging and meals for a large work force. In fact, we logged over 5,500 man days in hotel rooms. And that doesn't allow for all the local people we had working on the set.

We were making one of the largest sets ever built for a movie. Our first shipment of lumber alone cost \$100,000 mostly for thousands and thousands of sheets of plywood and 10 x 10 x 30' beams. We used over 14,000 pounds of nails. And in addition to the sheer size of the barge that we were building we were doing all this out in the desert in an area where thousands of people come to ride their dune buggies.

Over Thanksgiving holiday when we first erected the fence around the set,



there was a reported crowd of 35,000 dune buggy enthusiasts there. We needed to camouflage ourselves from



the public and to schedule our shooting to avoid stray dune buggies creeping into a shot in the distance.

“WE WERE SO lucky with the weather on location. Nothing went wrong. This was supposed to be the dread season of sandstorms in Yuma. The locals were warning us: “You'll be blown out of the desert. You'll never get any shooting done”.

But we had only two days of sandstorms when we had to stop work. And even on one of those days I still managed to get out and shoot some useable stuff.

Not that it was easy work. On a good day in Yuma the temperature would be 120 degrees. That was bad for us but for, say, the Gamorrean guards in their suits, it was like running a marathon every 24 hours.”

RICHARD MARQUAND
Director

LEFT: From the deck of Jabba the Hutt's Sail Barge, built on location in Buttercup Valley, California, Producer Howard Kazanjian reviews the progress of the movie with George Lucas.

“AT THE YUMA location we had to disguise the fact that we were shooting a *Star Wars* movie. We called ourselves *Blue Harvest* and put out the word that we were making a horror movie. We employed a huge security force on site led by our own security director with around-the-clock security guards and a huge chain link fence.

But someone cut the chains at night, sneaked in and took some photographs. So pictures of a *Star Wars* model surfaced in the press and it became a battle of wits between the press and us from then on. I was always avoiding the question of *Return of the Jedi*. “This is *Blue Harvest*”, I'd be saying. “It's about horror beyond imagination! As our T-shirts and caps read.” Well, some of them bought it and some of them didn't but in the end we had about sixty diehard *Star Wars* fans turn up and refuse to leave until they'd got a few photographs. But really they were no trouble. The whole thing worked out exceptionally well.”

HOWARD KAZANJIAN
Producer

LEFT: On the top deck of Jabba's Sail Barge, a Nikto guard takes aim and prepares to fire his canon.

FOLLOWING PAGES:
Princess Leia in the costume of a dancing girl, with her new master, *Jabba the Hutt*.



Part 3
ON LOCATION

REDWOODS FOREST, CALIFORNIA Crescent City

**MIKI
HERMAN**
*Unit Production
Manager*

"I T WAS A LONG search to find a location for the scenes set on the Ewok's moon of Endor. I started in Santa Cruz, in Southern California and went all the way up the west coast to British Columbia in Canada.

Our biggest problem was to try and persuade landowners to allow us to take valuable forestry property and turn it into a battlefield. Not surprisingly, this ruled out a number of prime locations. A film crew in action on location is sort of like an army of termites. . . they drag cables around, they damage the vegetation, there's a great many feet trampling paths everywhere, and the wheels on the trucks and vehicles can be very destructive to the environment.

We were determined to find a redwood forest location and it was quite a while before we discovered Crescent City in northwestern

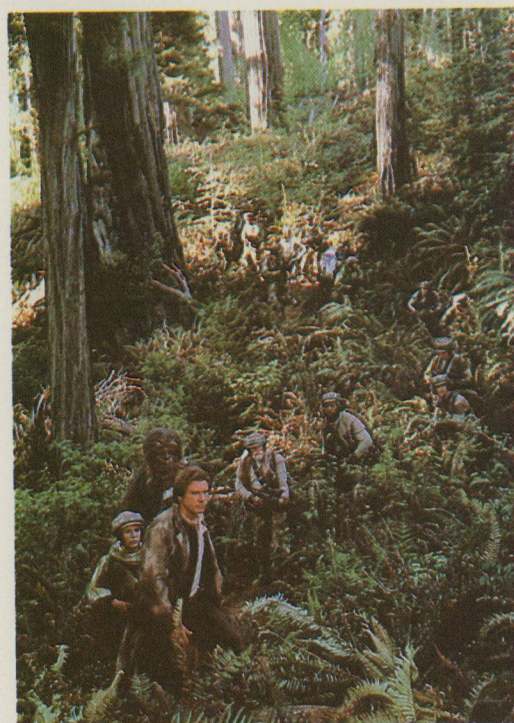


PHOTO: RALPH NELSON, JR

California. The local economy here has been hit badly by the recession in the lumber industry and the local population was glad to assist us.

We had to clear the land and re-plant it in order to give it the feeling of an exotic location. That took quite a few weeks of work. And we had our work cut out, too, with the local animals and insect population. There was a little nervousness when we discovered that a bear was in the vicinity and had announced his presence by leaving those long deep scratch marks all over a particular tree on one of the sets. But they didn't cause any real problems and, at least, there weren't any snakes.

Forest terrain is always going to be a problem for actors and technicians. It was especially difficult for the "little people" who were wearing the Ewok suits. It's not a very easy thing wearing a very bulky costume out of which you can't see very easily and that restricts

RIGHT: Han, Leia and Chewie lead the Rebel strike team through the Endor forest.

OPPOSITE PAGE: Frame enlargement of the Ewok village at night.

BELOW: George Lucas and Carrie Fisher during a break on location at Crescent City.

PHOTO: GARY KURTZ



MATTE PAINTING: MICHAEL PANGRAZIO

RIGHT: On location in the forest at Crescent City the "army of termites" gets set to shoot another scene.

your breathing, and, at the same time, to run around with just latex foam on the bottom of your feet, stumbling over rocks and branches everywhere.

Of course, we tried to make it comfortable for them but patience can wear thin. After several weeks of filming, on one particular morning in the last week of shooting, we turned up on the set to find our Production Assistant, Ian Bryce, with a terribly worried expression on his face. He showed us a note that the Ewok actors had written which said: "Ian, we went to the airport. We've had it. We've had enough and we're leaving."

Ian went tearing off, wild eyed, to catch them at the airport but he got a flat tire not far from the set. He came back to get another car and just before he was ready to leave again for the airport, the Ewok's bus rolled up and they all got off laughing and shouting, wearing "Revenge of the Ewok" T-shirts."

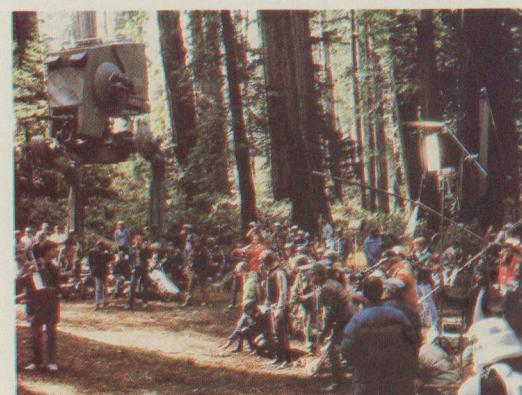


PHOTO: GARY KURTZ

on end. We experienced hardly any rain up there – which was a little short of a minor miracle.

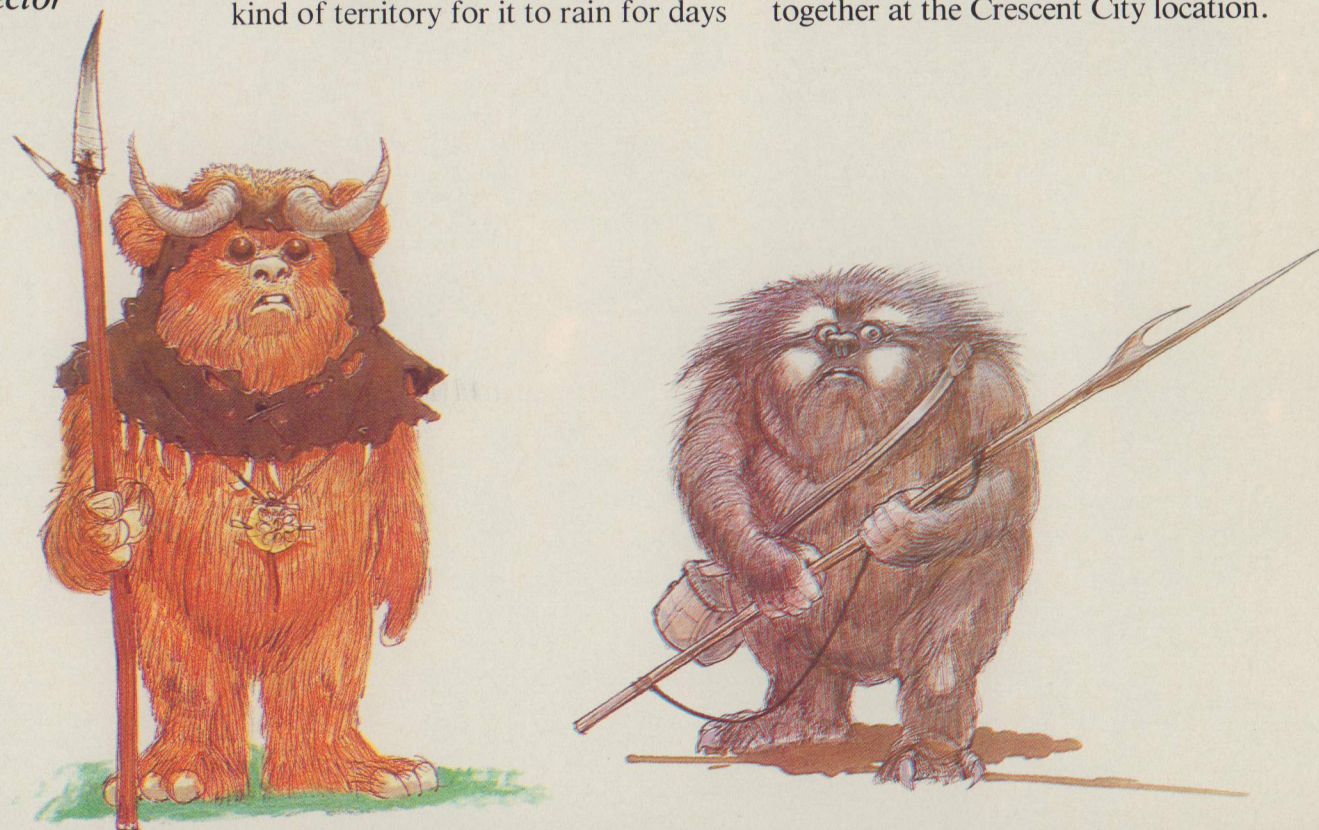
On that particular location the dwarves who were acting in the Ewok suits were just magnificent. They almost took on the personality of the characters they were portraying. Ewoks are like little dogs, tremendously brave, suspicious, alert and loyal. And they are liable to suddenly become very frightened. And if they are frightened they become mean, and very mean indeed if they are not your friend. But if they *are* your friend, they are your friend for life. That's a rather primitive and tribal kind of philosophy which all came together at the Crescent City location.

BELOW LEFT: Sketch of an Ewok by Joe Johnston.

BELOW RIGHT: Preliminary development sketch of an Ewok, again by Joe Johnston.

RICHARD MARQUAND
Director

“WE WERE really lucky in the North Woods. It isn't unusual in that kind of territory for it to rain for days



OLD FAVORITES Part 3 ON LOCATION

“OVER THE YEARS, I have developed a genuine fondness for C-3PO. I have come up with a theory that the reason C-3PO and R2-D2 work together so well is that they're Laurel and Hardy in metal. They are both strange-looking and slightly stupid. You never know who the clever one really is. C-3PO *may* be clever because he's, ahem, the tall, good-looking one. Right? But he gets too flustered over problems. The short, dumpy one bumps into things, but he is much more logical during times of stress.

I've tried to show real character development in C-3PO in the three films. C-3PO has moments of almost psychological tension in *Return of the Jedi*, moments where he's not sure what's happening or why. He also gets to be something that he always wanted to be. You know the way some people dream of becoming movie stars? Well,

“IHAVE TO SAY that we had a tremendous group of actors. The ones playing people, I mean. I think that if I had had anyone who was egocentric, or waspish amongst the human actors, I would have been sunk. Mark (Hamill), Harrison (Ford) and Carrie (Fisher) for example, form a great club. They're ace. They really are. They've known each other and worked with each other for so long in the previous movies, that they could solve problems for me on the spot. They knew precisely where the characters were coming from, and that's such an advantage.

I was nearly destroyed by R2-D2. He has a team of I don't know how many people, as his bodyguards and mechanics and handlers, and then he has also something like 26 different



LEFT: "Laurel and Hardy in metal . . .?" – C-3PO with R2-D2.

FOLLOWING PAGE: Princess Leia and Chewbacca warn C-3PO to be quiet during the raid on the Imperial bunker on Endor.

PHOTO: RALPH NELSON, JR.

C-3PO has a goal like that as well. In this movie, he finally achieves it."

personas. An R2-D2 unit is a tough act to work with, I'll tell you. R2-D2 is probably the most egocentric, wild, headstrong and trying piece of machinery that any director could ever be cursed with on a set. He was a lot easier to work with when George (Lucas) first met him out in Tunisia shooting *Star Wars*. There were a lot of tricks, a lot of malfunctions, he hadn't learned at that time.

We would have a perfect rehearsal and all the mechanical and electronic bits would be functioning exactly on cue. But as soon as it came time for the actual shot, you could be sure he would have wandered off somewhere, or was in a meeting, or had broken down, or would spring a droid surprise. You need a sense of humour and a lot of patience to work with robots!"

RICHARD MARQUAND
Director





Part 4

POST PRODUCTION

*“Drilling thousands and
thousands of holes
can get to be
pretty monotonous . . .”*



VISUAL EFFECTS DEPARTMENT

**ARTHUR
REPOLA**
Supervising
Visual Effects
Editor

RIGHT: The miniature
model Death Star surface
rigged to explode by
pyrotechnics expert,
Thaine Morris at ILM.

“SUPERVISING the visual effects on any *Star Wars* movie presents intractable problems of logistics and scheduling. On *Return of the Jedi* we have literally had our cameras going 24 hours a day with a day crew and a night crew with both crews working six days a week. On *The Empire Strikes Back*, for example, we produced 1,650 cam reports. (Every time an element is shot, it is accompanied by a cam report.) For *Return of the Jedi*, we will almost certainly produce 3,000 cam reports and our filing system has been put on a computer.

For a single shot that might last a second or two on screen, involving two dozen spaceships in formation or battling it out, we are working with as many as fifty seven separate elements. This means fifty seven separate pieces of film, fifty six for the ships themselves and a final element for the starfield. George Lucas personally approved every single element. Not just every shot, but every element – every ship, every planet, every laserburst. Some of the composites will have been looked at 20 or 30 times before they are finally in the can and if changes have to be made, it's our job to find a way to do it without having to go back and waste valuable stage time to re-shoot something. We have developed all kinds of techniques to figure out ways of making a spaceship look right without resorting to re-shooting.

And we don't have the benefit of being able to draw on stock shots. The only stock shots we can resort to is to go back to *The Empire Strikes Back*



and *Star Wars* and use stuff like starfields and ships that didn't appear in the final print. So, another part of our job is to keep track of all that film, or the elements, from all the previous movies and often I'll spend days researching such material. Of course, the fans would never be able to tell from which particular movie a particular starfield or a shot of a ship might have come because we make sure that the ships are re-positioned, turned upside down and changed in any number of ways. On *Return of the Jedi* there are many many more visual effects than we've ever had to handle before, but I'm confident that we have come up with some fairly spectacular and technically superior material.”

“IN THE SPACE Battle sequences where the Empire's fleet of destroyers and fighters merge into the Rebel fleet, I think that audiences are going to have to strap

themselves into the theatre just to survive the G-forces!

With the visual work that we have done on these battles, this film is going to be a two-hour roller-coaster ride. Individual battles are being fought all over the screen with the larger ships manoeuvring between each other, small ships whipping in and out everywhere and all hell breaking loose in a series of chaotic space confrontations.

We take a different visual approach towards Rebel equipment, vehicles and transport equipment than we do for the forces of the Empire. Rebel equipment is not as sleek, it's not so hi-tech – it's almost funky in comparison to the cold, hard-edged and menacing lines of the Empire fleet.

There are some beautiful new models in *Return of the Jedi*. Take the shuttle, for example. This is a beautiful piece of equipment, angular, graceful and fully mechanised. This mechanisation means that we can motion control the wings so that they open up during a shot in a slow, graceful movement. As it docks, the wings fold up, almost like a bird. It's great to have a model like the shuttle to work with because you can do so much with it in a subtle and delicate way. The shuttle is a typical piece of Empire technology and just a joy to work with.

On the other hand, as a cameraman, shooting Admiral Ackbar's Star Cruiser, *Headquarters Frigate*, was a much tougher proposition altogether. From the side, or from a $\frac{3}{4}$ angle, it looked pretty nice but the head-on shots were a nightmare because of the lack of angles on the ship. That kind of bumpy, rounded design is perfectly in keeping with the Rebel force's approach to technology but its shapelessness is a drawback in camera terms.”

**KEN
RALSTON**
Visual Effects
Supervisor



FAR RIGHT SEQUENCE:
Showing the various
'elements' that go into
making a fairly simple
composite. Thousands of
such elements must be
produced for the superb
special effects to be found
in *Return of the Jedi*.
finished result of this

1. Hold out Matte
2. Cover Matte
3. Background forest plate
4. Blue screen element
5. Completed composite.

PREVIOUS PAGE: Nien
Numb, at the controls
of the Millennium Falcon.



LEFT: Camera operator
Don Dow adjusts the
lighting on the space
shuttle before filming.

Part 4
POST
PRODUCTION

STOP-MOTION ANIMATION

**DENNIS
MUREN**
*Visual Effects
Supervisor*

ABOVE RIGHT: *Creature Supervisor, Phil Tippett and Effects Cameraman, Mike Owens, discuss animating the AT-ST walker on the Go-Motion rig.* MIDDLE RIGHT: *ILM Camera Operator, Mike McAlister, manipulating the model speeder bike puppet. He is doing this to conform to movements he has already programmed into the motorized pylon the model is attached to.* BOTTOM RIGHT: *Mike McAlister, building the speeder bike 'mover' machinery.*

“ONE OF THE NEWER techniques we have developed at Industrial Light and Magic is an advanced version of stop-motion animation photography. This is called go-motion and with this technique we motorize the puppets externally. We intersperse go-motion with some hand animation or with the more familiar stop-motion techniques, but the majority of the movements of the creature or vehicle in question will be made by these external motors, so that the object actually blurs while the shutter is open and we avoid the annoying staccato effect that usually accompanies stop-motion animation.

Go-Motion makes everything much more life-like, and we can hide the rods or whatever is attached to the model or puppet, by shooting them against dark backgrounds, smoke-filled caves or by use of the bluescreen technique. In fact, this technique was used on the movie *E.T. The Extra-Terrestrial*, for the flying bicycle sequences.”



PHOTO: KERRY NORDQUIST



PHOTO: KERRY NORDQUIST



PHOTO: TERRY CHOSTNER

**PHIL
TIPPETT**
*Creature Design
Supervisor*

“WE USED THE NEW go-motion techniques on the AT-ST (All Terrain Scout Transport) walkers. It suited them because they are so mechanical. Essentially, go-motion is a computerized rod-puppet technique and we have video animation tape machines which build up a library of the model's movements. We build up movement on one axis at a time until we achieve the motion that we want to keep. Then we connect this motion to the computer's memory and build on it. In this way we can quickly build up movements which we can use over and

over again. For the sake of greater reality, we mix in an extra 15-20 per cent of stop-motion animation by hand. This helps to differentiate one walker from another. Using traditional stop-motion, we would have taken several days just to shoot one walker. But because we have refined go-motion techniques, the shots didn't take much more than an hour or so to shoot.

The end result is that with go-motion we get a much more realistic and satisfactory performance in a fraction of the time. It's a really neat advance.”

OPPOSITE PAGE: *An Imperial biker scout leaps on his speeder bike outside the bunker on Endor.*

PHOTO: RALPH NELSON, JR



MATTE PAINTING EFFECTS

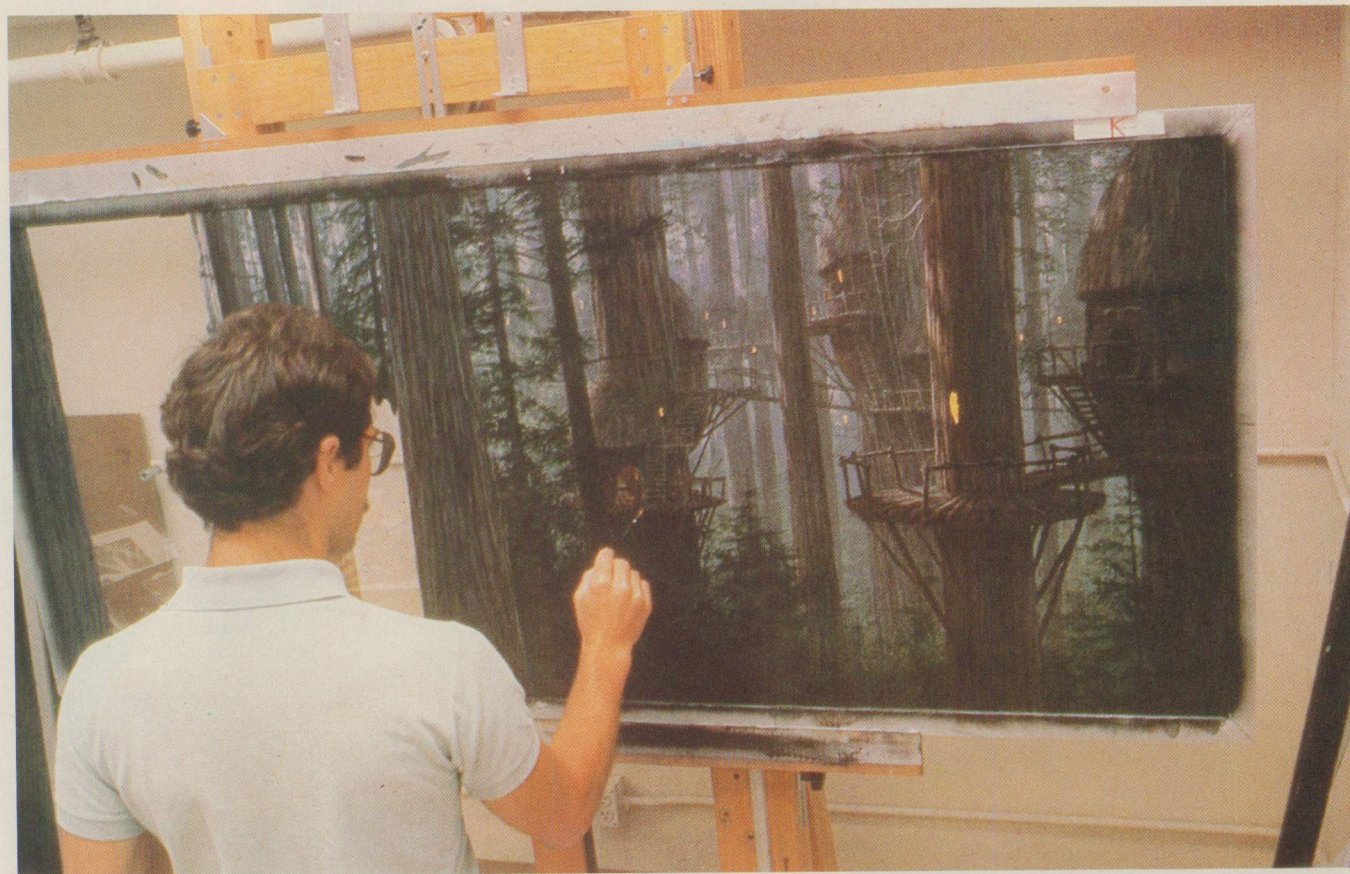


PHOTO: KERRY NORDQUIST

MICHAEL PANGRAZIO Matte Painting Supervisor

ABOVE: Matte artist, Chris Evans, working on a matte painting of an Ewok village.

RIGHT: Matte Painting by Mike Pangrazio of the Moon of Endor.

FAR RIGHT: Matte Painting Supervisor, Mike Pangrazio, working on the Rebel docking bay glass matte painting. The unpainted area bottom right is where the live action plate will be projected in.

“WE HAVE REALLY been able to utilize matte painting techniques to their best advantage in *Return of the Jedi*. We have a team of five people, three painters and two cameramen, and altogether, we produced around 45 paintings using a wide variety of techniques.

Usually, we're painting on sheets of glass that are about two and a half feet by six feet in length, unless there's some special requirement for the shot. Then we have to expand that measurement up to four feet by eight feet. We also work on white masonite. We worked on masonite on a couple of the Death Star paintings. One painting as complicated as a type detail of a part of the Death Star, could take

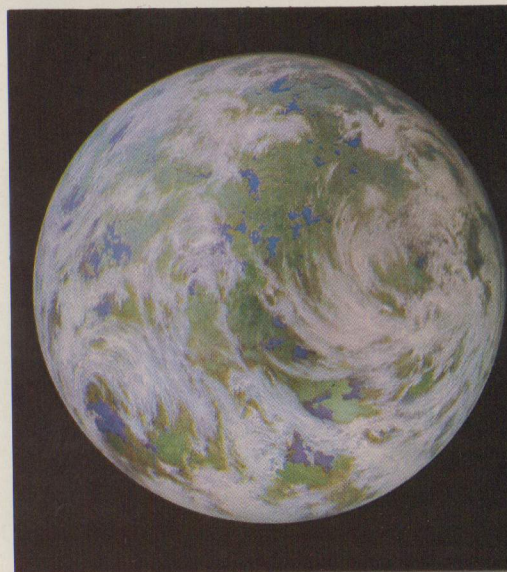


PHOTO: KERRY NORDQUIST

us two or three weeks to do. And the process is further complicated by the lighting requirements. For lights we drill holes through the piece of masonite the painting was done on and



PHOTO: KERRY NORDQUIST

backlight it with different colored gels to give it the feel of a city in space. Drilling thousands of holes can get to be pretty monotonous – but the effect can be spectacular.

My favorite painting in *Jedi* is of a docking bay on a Rebel ship. We start off looking straight across the docking

bay from a high angle, about 40 feet in the air. The ceiling and the sides of the walls of the bay are visible – it's drawn to a huge scale – and there are a few ships visible in the background, drifting past the opening space.

There is some live action projected onto the painting together with a number of vehicles and ships. The final effect is magnificent, very convincing, like a ten million dollar shot. It would be impossible to actually build a set anything like that and, of course, it's exciting to work on a master painting of this kind which you know can't be produced in any other way. Even if it is on screen only for a few seconds!

TOP LEFT: Matte Painting Supervisor, Mike Pangrazio, working on a preliminary painting of Jabba's palace. TOP RIGHT: The finished preliminary painting.

BOTTOM LEFT: A live action plate as it was shot. The area in black is paint on glass placed in front of the camera to obscure the area where the painting will go. BOTTOM RIGHT: The finished result. An actual frame from the movie.

VIDEOMATICS AT ILM

Part 4
POST
PRODUCTION

**DENNIS
MUREN**
*Visual Effects
Supervisor*

“VIDEOMATICS is the use of video equipment to create a cartoon version of a special effect you hope to commit to film later. Of course, working with video is much cheaper than working with film, and this technique has been used for some time now in the making of commercials.

When we were making *Star Wars*, George Lucas took a lot of old World War II footage of aerial dog-fights and came up with a set of shots that gave us a feeling of the action required for the attack on the Death Star. On *The Empire Strikes Back* he had cartoon versions of special effects battle sequences especially shot – with a special department created to do them – and they served the same purpose as the old World War II footage.

We were looking around for some other way to do this kind of stuff, and for a while, we used a computer system linked to a video game-type of arrangement.

Using this computer system, we could just dial in the moves in a chase or a battle sequence and George could give us a fast answer on whether he wanted the sequence committed to film or whether we should try again. By the time we were ready to start work on *Return of the Jedi*, this computer system was becoming too much of a burden. So we began experimenting with the idea of shooting pre-film cartoons on a miniature set only 16 feet by 4 feet. This was for the speeder bike chase scene set on Endor where the speeder bikes were going to have to weave in and out of the redwood forest.

The miniature set was made of

carpet for the grass and cardboard tubes for the trees, with mock-up speeder bikes about a foot long, and the regular action figures that kids can buy in a toy store. We shot all of this on video and because of the immediate feedback you can get using video, it was a big help in making decisions about exactly how we would approach the creation of the speeder bike chase scene on film.

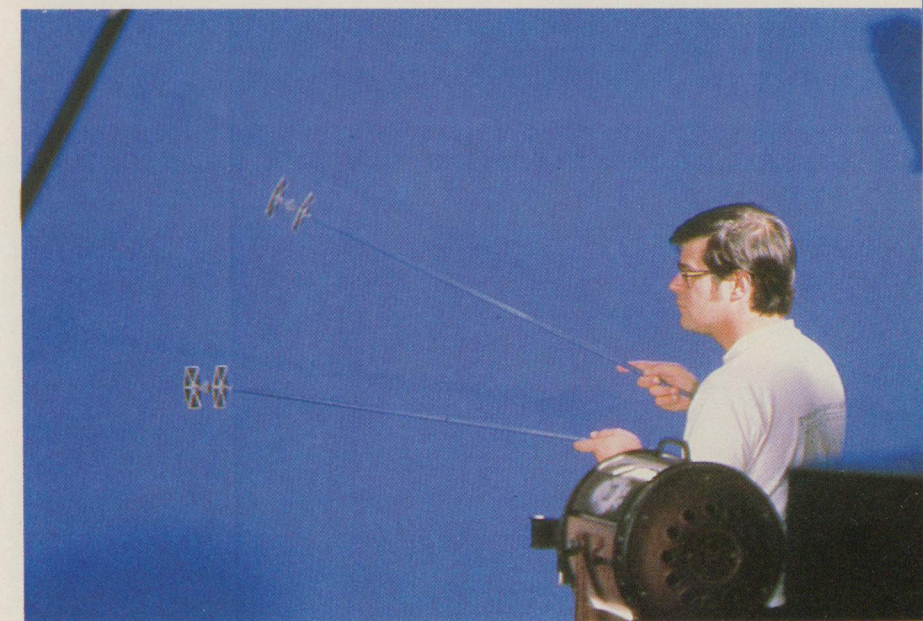
In fact, it worked out so well, that we ended up setting up a video stage and buying equipment, including a matte-ing system, and we pretty much did the entire effects for *Return of the Jedi* to match those cartoon videos. Getting the rhythms and the patterns of the sequences worked out on video in advance is a real step forward for us because it is such an expensive and time-consuming process once you turn to shooting it on film. It's also a lot of fun to use video, but I think that videomatics is here to stay and that it is a logical step forward for storyboards.”

OPPOSITE PAGE: *Luke and Leia prepare to swing to safety from the top deck of Jabba's desert Sail Barge.*

FOLLOWING PAGES:
Composite of the Millennium Falcon in the Death Star tunnel by Terry Chostner, Kerry Nordquist and Roberto McGrath.

BELOW: *ILM cameraman, Sel Eddy, “flies” TIE fighters in front of blue screen for Videomatics shot.*

PHOTO: RALPH NELSON, JR





STAR WARS RETURN OF THE JEDI

MARK HAMILL
as Luke Skywalker

BILLY DEE WILLIAMS
as Lando Calrissian

SEBASTIAN SHAW
as Anakin Skywalker

FRANK OZ
performing
Yoda

STARRING
HARRISON FORD
as Han Solo

ANTHONY DANIELS
as C-3PO

IAN MCDIARMID
as the Emperor

CARRIE FISHER
as Princess Leia

CO-STARRING
PETER MAYHEW
as Chewbacca

JAMES EARL JONES
as the Voice of
Darth Vader
and
ALEC GUINNESS
as Ben (Obi-Wan) Kenobi

DAVID PROWSE
as
Darth Vader

R2-D2
Moff Jerjerrod
Admiral Piett
Bib Fortuna
Wedge
Admiral Ackbar
General Madine
Mon Mothma
Wicket
Paploo
Boba Fett
Oola
Sy Snootles
Fat Dancer
Teebo
Logray
Chief Chirpa
Ewok Warrior
Ewok Warrior
Nicki
Stardestroyer Controller #1
Stardestroyer Controller #2
Stardestroyer Captain #1
Stardestroyer Captain #2
Jabba Puppeteers

Puppeteers

KENNY BAKER
MICHAEL PENNINGTON
KENNETH COLLEY
MICHAEL CARTER
DENIS LAWSON
TIM ROSE
DERMOT CROWLEY
CAROLINE BLAKISTON
WARWICK DAVIS
KENNY BAKER
JEREMY BULLOCH
FEMI TAYLOR
ANNIE ARBOGAST
CLAIRE DAVENPORT
JACK PURVIS
MIKE EDMONDS
JANE BUSBY
MALCOM DIXON
MIKE COTTRELL
NICKI READE
ADAM BAREHAM
JONATHAN OLIVER
PIP MILLER
TOM MANNION
TOBY PHILPOTT
MIKE EDMONDS, DAVID BARCLAY
MICHAEL McCORMICK, DEEP ROY,
SIMON WILLIAMSON, HUGH SPIRIT,
SWIM LEE, MICHAEL QUINN,
RICHARD ROBINSON

EWOKS

MARGO APOSTOCOS
RAY ARMSTRONG
EILEEN BAKER
MICHAEL H. BALHAM
BOBBIE BELL
PATTY BELL
ALAN BENNETT
SARAH BENNETT
PAMELA BETTS
DAN BLACKNER
LINDA BOWLEY
PETER BURROUGHS
DEBBIE CARRINGTON
MAUREEN CHARLTON
WILLIAM COPPEN
SADIE CORRIE
TONY COX
JOHN CUMMING
JEAN D'AGOSTINO
LUIS DE JESUS
DEBBIE DIXON
MARGARITA FERNANDEZ

PHIL FONDACARO
SAL FONDACARO
TONY FRIEL
DAN FRISHMAN
JOHN GAVAM
MICHAEL GILDEN
PAUL GRANT
LYDIA GREEN
LARS GREEN
PAM GRIZZ
ANDREW HERD
J. J. JACKSON
RICHARD JONES
TREVOR JONES
GLYNN JONES
KAREN LAY
JOHN LUMMISS
NANCY MACLEAN
PETER MANDELL
CAROLE MORRIS
STACY NICHOLS
CHRIS NUNN

BARBARA O'LAUGHLIN
BRIAN ORENSTEIN
HARRELL PARKER JR.
JOHN PEDRICK
APRIL PERKINS
RONNIE PHILLIPS
KATIE PURVIS
CAROL READ
NICHOLAS READ
DIANA REYNOLDS
DANIEL RODGERS
CHRIS ROMANO
DEAN SHACKENFORD
KIRAN SHAH
FELIX SILLA
LINDA SPRIGGS
GERARD STADDON
JOSEPHINE STADDON
KEVIN THOMPSON
KENDRA WALL
BRIAN WHEELER
BUTCH WILHELM

PRODUCTION

Directed by
RICHARD MARQUAND

Produced by
HOWARD KAZANJIAN

Screenplay by
LAWRENCE KASDAN and GEORGE LUCAS

Story by
GEORGE LUCAS

Executive Producer
GEORGE LUCAS

Co-Producers
ROBERT WATTS, JIM BLOOM

Production Designer
NORMAN REYNOLDS

Director of Photography
ALAN HUME
B.S.C.

Edited by
SEAN BARTON

MARCIA LUCAS

DUWAYNE DUNHAM

Visual Effects

RICHARD EDLUND
A.S.C.

DENNIS MUREN

KEN RALSTON

Costume Designers
AGGIE GUERARD RODGERS, NILO RODIS-JAMERO

Mechanical Effects Supervision
KIT WEST

Make-Up and Creature Design
PHIL TIPPETT, STUART FREEBORN

Sound Design
BEN BURTT

Music by
JOHN WILLIAMS

First Assistant Director/
Second Unit Director

DAVID TOMBLIN
MARY SELWAY BUCKLEY

Location Director of Photography
Additional Photography

JIM GLENNON
JACK LOWIN

Production Sound
Supervising Music Editor

TONY DAWE, RANDY THOM
KENNETH WANNBERG

Music Recording
Orchestrations

ERIC TOMLINSON
HERBERT W. SPENCER

Chief Articulation Engineer
Production Supervisor

STUART ZIFF
DOUGLAS TWIDDY

Production Executive
Unit Production Manager

ROBERT LATHAM BROWN
MIKI HERMAN

Assistant Production Manager
Associate to Producer

PATRICIA CARR
LOUIS G. FRIEDMAN

Conceptual Artist
Art Directors

RALPH McQUARRIE
FRED HOLE, JAMES SCHOPPE

Set Decorators
Property Master
Chief Hairdresser
Stunt Co-Ordinator
Stunt Arranger
Production Controller
Production Accountant
Second Assistant Directors

Production Assistant
Production Co-Ordinator
Co-Ordination Assistants
Script Supervisor
Location Script Supervisor
Location Casting
Assistant to Mr. Kazanjian
Assistant to Mr. Bloom
Assistant to Mr. Lucas
Assistant Art Directors

Set Dresser
Construction Manager
Assistant Construction Manager
Construction Supervisor
General Foreman
Construction Foremen

Paint Foreman
Sketch Artist
Scenic Artist
Decor and Lettering Artist
Set Draftsmen

Production Buyer
Construction Storeman
Operating Cameramen

Focus Pullers
Assistant Cameramen
Second Assistant Cameramen

Gaffers
Aerial Photography
Helicopter Pilot
Key Grip
Best Boy
Dolly Grip
Matte Photography Consultant
Rigging Gaffers

Chief Make-Up Artists
Make-Up Artists

Hairdressers
Assistant Articulation Engineer
Armature Designer
Plastic Designer
Sculptural Designers
Key Sculptors

Chief Moldmaker
Moldmaker
Creature Technicians

Creature Consultants
Production/Creature Co-Ordinator
Latex Foam Lab Supervisor
Animatronics Engineer
Wardrobe Supervisor
Costume Supervisor
Wardrobe Mistress
Shop Manager
Jeweler
Creature Costumers

Assistant Property Master
Property Supervisors
Property
Propmakers
Master Carpenter
Master Plasterer
Master Painter
Supervising Rigger
Supervising Stagehand
Sail Co-Ordinators
Sails Engineering

Assistant Film Editors

Sound Effects Editors

Dialogue Editors

MICHAEL FORD, HARRY LANGE
PETER HANCOCK
PATRICIA McDERMOTT
GLENN RANDALL
PETER DIAMOND
ARTHUR CARROLL
MARGARET MITCHELL
ROY BUTTON, MICHAEL STEELE,
CHRIS NEWMAN, RUSSELL LODGE
IAN BRYCE
LATA RYAN
SUNNI KERWIN, GAIL SAMUELSON
PAMELA MANN FRANCIS
BOB FOREST
DAVE EMAN, BILL LYTLE
KATHLEEN HARTNEY ROSS
JOHN SYRJAMAKI
JANE BAY
MICHAEL LAMONT,
JOHN FENNER, RICHARD DAWKING
DOUG VON KOSS
BILL WELCH
ALAN BOOTH
ROGER IRVIN
BILL IAMS
GREG CALLAS, GUY CLAUSE,
DOUG ELLIOTT, STAN WAKASHIGE
GARY CLARK
ROY CARNON
TED MICHELL
BOB WALKER
REG BREAM,
MARK BILLERMAN, CHRIS CAMPBELL
DAVID LUSBY
DAVID MIDDLETON
ALEC MILLS,
TOM LAUGHRIDGE, MIKE BENSON
MICHAEL FRIFT, CHRIS TANNER
LEO NAPOLITANO, BOB LA BONGE
SIMON HUME, STEVE TATE,
MARTIN KENZIE, MICHAEL GLENNON
MIKE PANTAGES, BOB BREMNER
RON GOODMAN, MARGARET HERRON
MARK WOLFE
DICK DOVA SPAH
JOE CROWLEY
CHUNKY HUSE, REG HALL
STANLEY SAYER, B.S.C.
CLARK GARLAND, TOMMY BROWN

TOM SMITH, GRAHAM FREEBORN
PETER ROBB KING, DICKIE MILLS,
KAY FREEBORN, NICK DUDMAN
MIKE LOCKEY, PAUL LE BLANC
EBEN STROMQUIST
PETER RONZANI
RICHARD DAVIS
CHUCK WILEY, JAMES HOWARD
DAVE CARSON,
TONY McVEY, DAVE SOSALLA,
JUDY ELKINS, DEREK HOWARTH
WESLEY SEEDS
RON YOUNG
RANDY DUTRA, KIRK THATCHER,
DAN HOWARD, JAMES ISAAC,
BRIAN TURNER, JEANNE LAUREN,
RICHARD SPAH JR., ETHAN WILEY
JON BERG, CHRIS WALAS
PATTY BLAU
TOM McLAUGHLIN
JOHN COPPINGER
RON BECK
MARY ELIZABETH STILL
JANET TEBROOKE
JENNY GREEN
RICHARD MILLER
BARBARA KASSAL, EDWINA PELLIKKA,
ANNE POLLAND, ELVIRA ANGELINETTA
CHARLES TORBETT

DAN COANGELO, BRIAN LOFTHOUSE
HOLLY WALKER, IVAN VAN PERRE
BILL HARGREAVES, RICHARD PETERS
BERT LONG
KENNY CLARKE
ERIC SHIRTCLIFFE
RED LAWRENCE
EDDIE BURKE
BILL KREYSLER, WARWICK TOMPKINS
DERRICK BAYLIS, PEGGY KASHUBA

STEVE STARKEY, CONRAD BUFF,
PHIL SANDERSON, NICK HOSKER,
DEBRA McDERMOTT, CLIVE HARTLEY
RICHARD BURROW,
TERESA ECKTON, KEN FISCHER
LAUREL LADEVICH, CURT SCHULKEY,
BONNIE KOEHLER, VICKIE ROSE SAMPSON

Assistant Sound Editors	CHRIS WEIR, BILL MANN, GLORIA BORDERS, SUZANNE FOX KATHY RYAN, NANCY JENCKS	Production Co-Ordinators	WARREN FRANKLIN, LAURIE VERMONT JOHN ELLIS, DAVID BERRY, KENNETH SMITH, DONALD CLARK, MARK VARGO, JAMES LIM
Re-Recording Mixers	BEN BURTT, GARY SUMMERS, ROGER SAVAGE, RANDY THOM	Optical Printer Operators	TOM ROSSETER, ED L. JONES, RALPH GORDON, PHILIP BARBERIO
Re-Recording Engineer	TOMLINSON HOLMAN	Optical Line-Up	TIM GEIDEMAN, DUNCAN MYERS, MICHAEL S. MOORE
Boom Operators	DAVID BATCHELOR, DAVID PARKER	Lab Technicians	GEORGE JENSON
Sound Assistants	SHEP DAWE, JIM MANSON	Production Illustrator	CHRIS EVANS, FRANK ORDAZ
Audio Engineers	T. M. CHRISTOPHER, CATHERINE COOMBS, KRIS HANDWERK, K. C. HODENFIELD, HOWIE, TOM JOHNSON, BRIAN KELLY, JAMES KESSLER, SUSAN LEAHY, ROBERT MARTY, SCOTT ROBINSON, DENNIE THORPE, JOHN WATSON	Matte Painting Artists	NEIL KREPELA, CRAIG BARRON
English Lyrics by	JOSEPH WILLIAMS	Matte Photography	TOM ST. AMAND
Hutttese Lyrics by	ANNIE ARBOGAST	Stop Motion Animator	PAUL HUSTON, CHARLES BAILEY, MICHAEL GLENN FULMER, EASE OWYEUNG
Ewokese Lyrics by	BEN BURTT	Chief Model Makers	WILLIAM GEORGE, MARC THORPE, SCOTT MARSHALL, SEAN CASEY, LARRY TAN, BARBARA GALLUCCI, JEFF MANN, IRA KEELER, BILL BECK, MIKE COCHRANE, BARBARA AFFONSO, BILL BUTTFIELD, MARGHI McMAHON, RANDY OTTENBERG
Special Effects Supervisor	ROY ARBOGAST	Model Makers	GARRY WALLER, KIMERLY KNOWLTON
Special Effects Foreman	WILLIAM DAVID LEE	Head Effects Animators	TERRY WINDELL, RENEE HOLT, MIKE LESSA, SAMUEL COMSTOCK, ROB LA DUCA, ANNICK THERRIEN, SUKI STERN, MARGOT PIPKIN
Special Effects Floor Controller	IAN WINGROVE	Effects Animators	HOWARD STEIN, PETER AMUNDSON, BILL KIMBERLIN
Senior Effects Technician	PETER DAWSON	Visual Effects Editors	ROBERT CHRISOULIS, MICHAEL GLEASON, JAY IGNASZEWSKI, JOE CLASS
Chief Electronics Technician	RON HONE	Assistant Visual Effects Editors	TED MOEHNKE
Wire Specialist	BOB HARMAN	Supervising Stage Technician	PATRICK FITZSIMMONS, BOB FINLEY III, ED HIRSH, JOHN McLEOD, PETER STOLZ, DAVE CHILDERS, HAROLD COLE, MERLIN OHM, JOE FULMER, LANCE BRACKETT
Location Special Effects	KEVIN PIKE, MIKE WOOD	Stage Technicians	THAINE MORRIS, DAVE PIER TERRY CHOSTNER
Choreographer	GILLIAN GREGORY	Pyrotechnicians	ROBERTO McGRATH, KERRY NORDQUIST
Location Choreographer	WENDY ROGERS	Supervisor-Still Photography	JERRY JEFFRESS, KRIS BROWN
Production Accountant	COLIN HURREN	Still Photographers	MIKE MacKENZIE, MARTY BRENNEIS
Assistant Accountants	SHEALA DANIELL, BARBARA HARLEY	Electronic System Designers	WILLIAM REEVES, TOM DUFF
Location Accountants	DIANE DANKWARDT, PINKI RAGAN	Electronic Engineers	GENE WHITEMAN
Transportation Co-Ordinator	GENE SCHWARTZ	Computer Graphics	UDO PAMPEL, CONRAD BONDERSON
Transportation Captains	JOHN FEINBLATT, H. LEE NOBLITT	Equipment Engineering Supervisor	DAVID HANKS, CHRIS RAND
Studio Transportation Managers	VIC MINAY, MARK LA BONGE	Machinists	MIKE BOLLES
Location Contact	LENNIE FIKE	Apprentice Machinists	WADE CHILDRESS, MICHAEL J. SMITH, CRISTI MCCARTHY, ED TENNLER
Still Photographers	ALBERT CLARKE, RALPH NELSON JR.	Design Engineer	CHRISSIE ENGLAND, LAURA KAYSEN, PAULA KARSH, KAREN AYERS, SONJA PAULSEN, KAREN DUBE
Unit Publicist	GORDON ARNELL	Equipment Support Staff	SUSAN FRITZ-MONAHAN, KATHY SHINE
Assistant Publicist	JUNE BROOM	Administrative Staff	GARRETT BROWN
Research	DEBORAH FINE	Production Assistants	BRUCE HILL PRODUCTIONS
MINIATURE AND OPTICAL EFFECTS UNIT		Steadicam (R) Plate Photography	JIM SCHURMANN, BOB HAGANS
INDUSTRIAL LIGHT AND MAGIC		Ultra High Speed Photography	SUNRISE FILM INC.
Art Director-Visual Effects	JOE JOHNSTON	Color Timers	LOOKOUT MOUNTAIN FILMS, PACIFIC TITLE, MONACO FILM LABS, CALIFORNIA FILM, VISUAL CONCEPTS ENGINEERING, MOVIE MAGIC, VAN der VEER PHOTO EFFECTS
Optical Photography Supervisor	BRUCE NICHOLSON	Negative Cutter	
General Manager, ILM	TOM SMITH	Additional Optical Effects	
Production Supervisor	PATRICIA ROSE DUIGNAN		
Matte Painting Supervisor	MICHAEL PANGRAZIO		
Modelshop Supervisors	LORNE PETERSON, STEVE GAWLEY		
Animation Supervisor	JAMES KEEFER		
Supervising Visual Effects Editor	ARTHUR REPOLA		
Effects Cameramen	DON DOW, MICHAEL J. McALISTER, BILL NEIL, SCOTT FARRAR, SEI WYN EDDY III, MICHAEL OWENS, ROBERT ELSWIT, RICK FICHTER, STEWART BARBEE, MARK GREDELL, DAVID HARDBURGER		
Assistant Cameramen	PAT SWEENEY, KIM MARKS, ROBERT HILL, RAY GILBERTI, RANDY JOHNSON, PATRICK McARDLE, PETER DAULTON, BESSIE WILEY, MARYAN EVANS, TOBY HEINDEL, DAVID FINCHER, PETER ROMANO		
Mime Artists	FRANKI ANDERSON, AILSA BERK, SEAN CRAWFORD, ANDY CUNNINGHAM, TIM DRY, GRAEME HATTRICK, PHIL HERBERT, GERALD HOME, PAUL SPRINGER		
Stunt Performers	BOB ANDERSON, DIRK YOHAN BEER, MARC BOYLE, MIKE CASSIDY, TRACY EDDON, SANDRA GROSS, TED GROSSMAN, FRANK HENSON, LARRY HOLT, BILL HORRIGAN, ALF JOINT, JULIUS LEFLORE, COLIN SKEAPING, MALCOM WEAVER, PAUL WESTON, BOB YERKES, DAN ZORMEIER		

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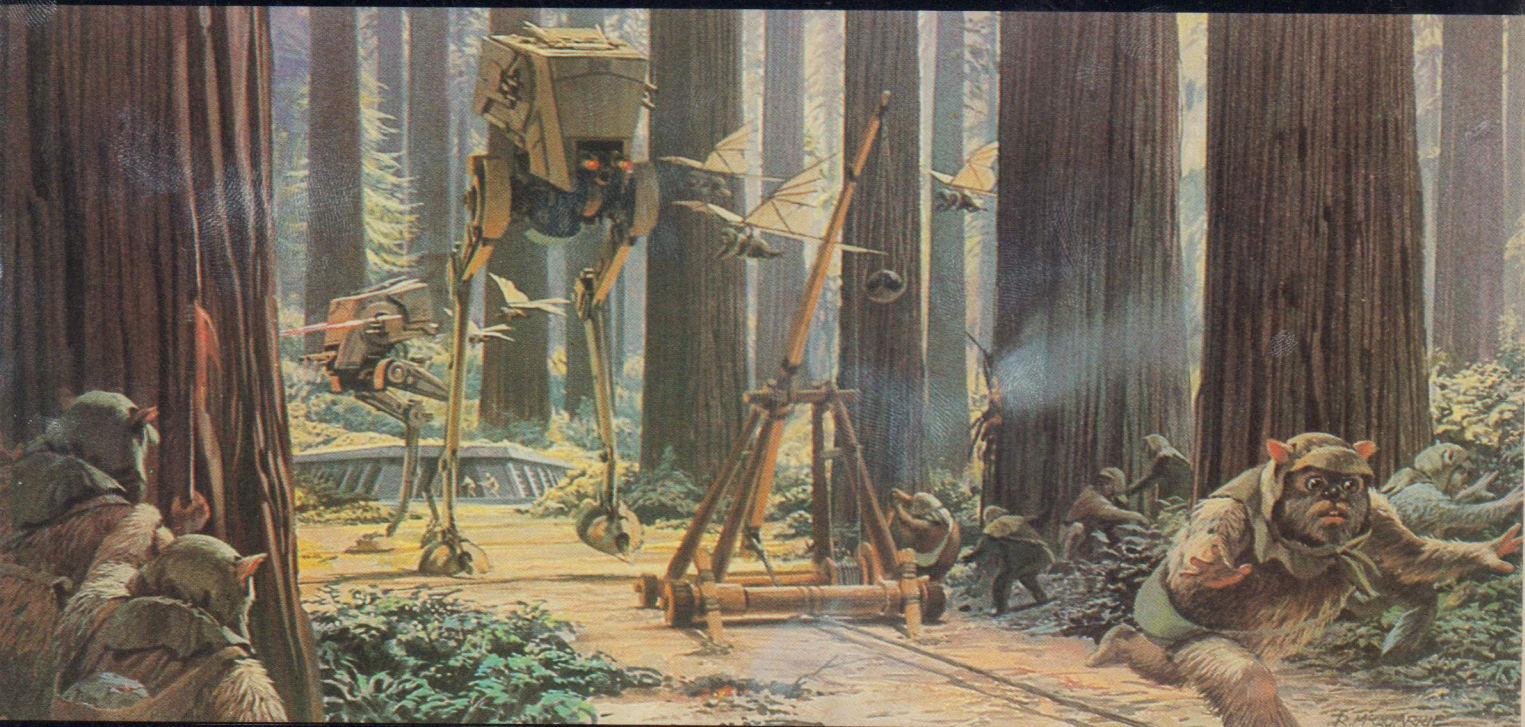
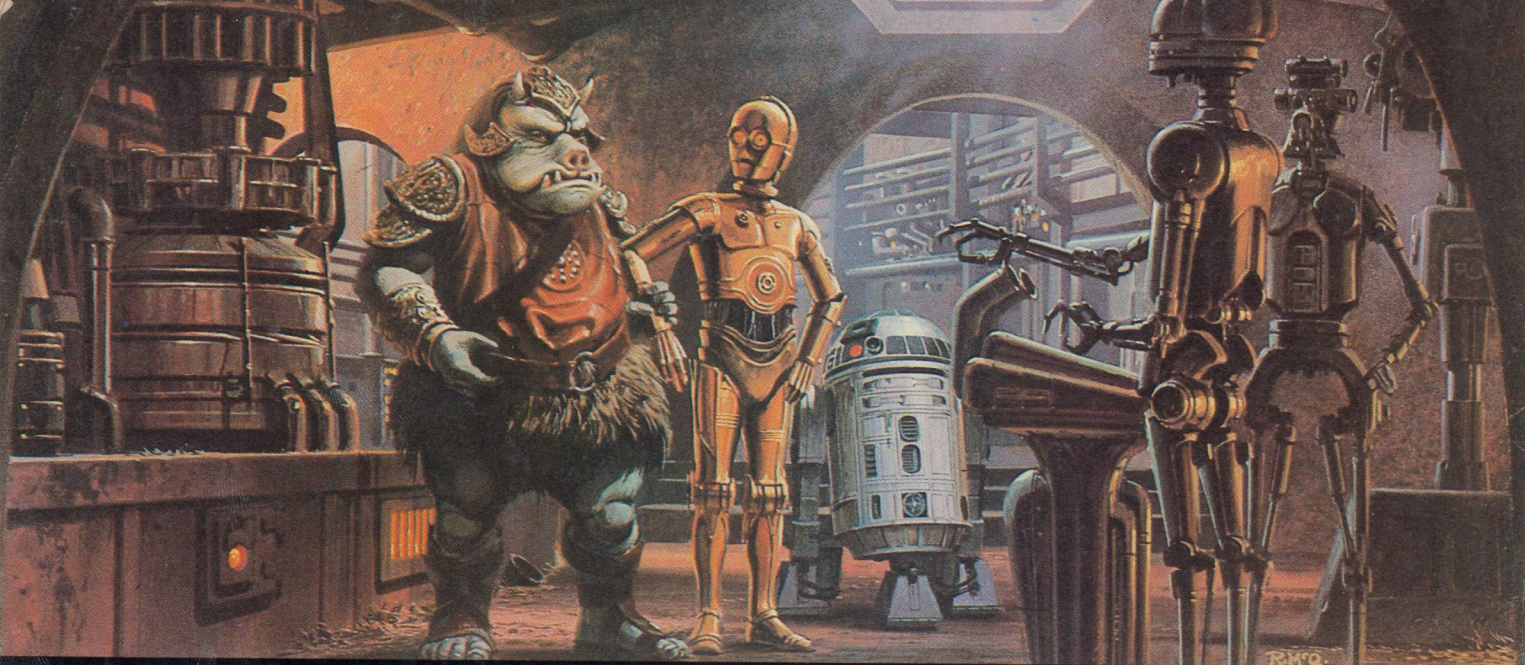
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Aerial Camera Systems by Wesscam Camera Systems (Europe)
Lighting Equipment and Crew from Lee Electric Ltd.

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