

Lights! Camera!

With BioForge, Origin hopes to create a new generation of truly interactive Interactive Movies. And from what David Upchurch has seen, it looks like they're going to do it...

GAME	BIOFORGE
PUBLISHER	ORIGIN
DEVELOPER	In-house team
WORK STARTED	SEPTEMBER 1992
DUE FOR COMPLETION	JUNE 1994

Er, excuse me — could you hold the line a second, please?" Sure, no problem — after all, it's taken me an age to set up this interview with Ken Demarest, and I'm not going to let him go now. Despite Ken's hand over his phone mouthpiece I can still hear muffled snatches of the conversation taking place in his office. There's some laughing and what could quite possibly be mild swearing, then Ken returns to the phone. "I'm sorry about that," apologises Ken. "We've got a Robotron machine in-house now, and somebody just came in and told me they might have beaten my high-score!"

For those who don't know their arcade history, let me explain that Robotron is a simple arcade shoot-'em-up created by coin-op kings Williams in the early '80s. A lot of software companies have coin-ops in their offices, but Ken works for Origin, a company whose name is synonymous with ground-breaking, processor-stretching software. Being told that Origin staff enjoy playing Robotron in their spare time is akin to learning that Porsche employees drive Mini Estates on their day's off.

Ken, however, is unrepentant.

"Oh God, I love those old games," he enthuses. "The gameplay values in some of them was so good. That's one of the things I want to keep in BioForge. Yeah, it's a high-tech product, it's got a lot of flash, it's

"Just because a game has

live action video that

doesn't automatically

make it an Interactive

Movie."

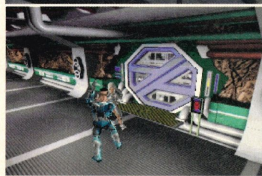
*Richard Gariotti,
Origin's Creative Director.*

cutting edge, so on and so forth, but at the end of the day I want it to be fun."

Ken is the Project Leader on BioForge, charged with overseeing every stage of the game's creation. It's a weighty responsibility, for

with BioForge Origin hopes to create the first truly interactive Interactive Movie.

In BioForge you control Lex, a half-human/half-machine cyborg who awakes to find himself in the midst of a strange alien environment. At the start of



(Above inset) Ken remembers clearly the moment when he first realised that he and his team were onto something big with BioForge... "It's when we went into one of our regular product reviews and first showed the game off to other members of the company — we got a spontaneous round of applause. That's when I thought 'Hey...'"

(Above) At various stages in the game, Lex gets to try out various cyborg suits, including a mirror suit that reflects his surroundings in a similar way to the 1000 in Terminator 2. Ken, however, won't reveal how this incredible effect was achieved... "Ooooh! Top Secret!" he laughs. "Ask me about it after the game comes out!"

the game you don't know who you are, where you are or why you're there, but you what you do know is that there's something very *wrong*. As the game progresses Lex goes on a bizarre journey of self discovery, which eventually results in our hero uncovering a grotesque alien plot of immense and terrifying proportions...

It's essentially an action/adventure game, with Lex having to solve problems and battle bad guys on his way to finding out his true identity. In many ways it

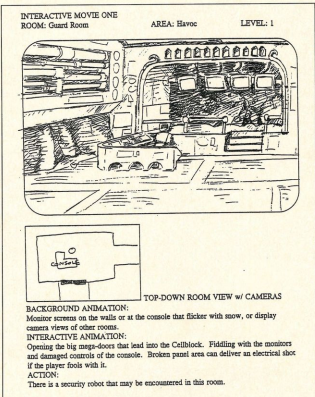
resembles Infragames' Alone In The Dark, only much, much more sophisticated. With its use of realistically-animated 3D characters and cinematic cut-scenes, seeing it in action you'd be forgiven for thinking you were watching — dare I say it? — a movie. Only this is one movie you can interact with...

Work first started on BioForge nearly a year and a half ago, in September 1992. "Coming up with the 3D guys — or what we call 'synthetic actors' — was the

Interaction!



(Above) Ken Demarest, the Project Leader on BioForge.

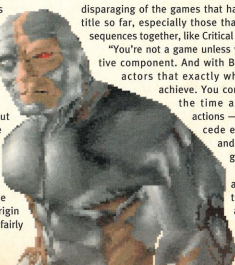


Origin has big plans for its synthetic actor technology. "We've already licensed out the synthetic actor engine to two other companies," says Ken, "one of which'll be using it to develop a game and one of which will be using it to create an educational product. And the synthetic actors are already being incorporated into other Origin games like *Bounty Hunter*."

thing that got me initially fired up," says Ken. "I felt that synthetic actors was technology that Origin as a company really needed to invest in if it was to be a dominant force in the future. And I also thought it'd be a heck of a lot of fun! I guess the fun part came first, and the justification came later!

"From there we brainstormed about how we could do it and how it would be best used, and it turned out that Interactive Movies was the place that was ripe for using this kind of thing."

Origin has some pretty clear ideas as to what constitutes an Interactive Movie (see the 'Interactive Movies: Origin has its say' panel), and Ken himself is fairly



disparaging of the games that have laid claim to the title so far, especially those that just stream video sequences together, like *Critical Path*.

"You're not a game unless you have an interactive component. And with BioForge's synthetic actors that exactly what we're going to achieve. You control a character all the time and control all his actions—you don't just intercede every now and then and make a decision to go left or right."

Ken spent several months developing the basic synthetic actor technology, purely to see if it



There are over twenty combat moves — which should please *Street Fighter* 2 fans, if nothing else. "You don't have to learn or get a handle on all the moves to be successful," Ken points out, "but for the people who enjoy combat they can bring it as far as they like. Also it's kind of fun to see your character doing all these neat combat moves."

(Left) Before any coding started on BioForge, Ken and his team drew up a 50-page movie-style "storyboard" detailing every room in the game — its contents, which characters reside there, what Lex can do there and what major plot developments happen there.



(Below left) Although Ken and his team have achieved most of things they originally set out to do, there's one thing that eluded them... "Yeah, face close-ups, where the face actually animates as a character speaks and looks human," sighs Ken. "As we're not on CD we don't have tons of speech, although we do have some. Getting good close-ups probably has as much difficulty involved in it as getting the synthetic actors working in the first place."

was workable or not. He used elements of *Strike Commander*'s 3D engine to create the basic synthetic actors, and once they were functioning more people were moved onto the BioForge project. The synthetic actors rapidly became much more sophisticated in both their look and how they moved.

"The original 3D models were textured by hand," explains Ken, "but now we're rendering each creature entirely in 3D Studio and then applying the textures created onto the game's simplified 3D models."

To create each character's huge range of animations, Ken and his team used a sensor suit called "The Flock Of Birds". The sensors were placed on actors who then performed each character's movements.

The sensors' data was then fed into a piece of hardware developed by Origin called "Salsa." The Salsa can take The Flock Of Bird's data and put it right into

SETTING THE SCENE

Although it was always planned that BioForge would "star" synthetic actors, the type of world in which these actors would perform changed several times during the game's initial design period.

"We actually had other concepts originally which ran along the lines of Doom," explains Ken. "But that would've required we develop the 2.5D engine [to create a Doom-like 3D environment with restricted vertical movement] at the same time as developing the synthetic actors technology and that was just a little too steep — trying to develop two major technologies at once would've been way too tough."

Instead, Ken and his team opted for "fixed" backdrops. These were first created in 3D Studio, and then rendered from various angles and viewpoints. The resulting graphics were then ported straight across into the code. During play, the BioForge game engine decides how to cut between the various views depending on what Lex is up to.

Unlike *Alone in the Dark*'s scenery, BioForge's sets are frequently animated and Lex can interact with them to a high degree — and they can interact right back, too. "The scenes that you walk around aren't just backgrounds; they're real and they've got objects in them that you can interact with," says Ken, "so it's not just something that you're passively watching — it's something that you're part of."

"For example, you might be running along a rocky ledge with an acidic pool below you. Meanwhile over to your right is a enemy ship which is just taking off and firing laser bolts at you, which you have to dodge — there's that kind of interactivity. The ship taking off is basically a rendered 3D Studio 'flick' [animation], but that flick is having some impact on you — it's actually interacting with you."



one of the synthetic actors in real-time," explains Ken. "So someone will put on the suit of sensors and Salsa will display the final way the character will look as the actor moves around. The beauty of this is that you get immediate feedback on whether a sequence works well or not. And by putting the sensors in a different position on the actors then they can control the movements of a robot or an alien."

The resulting animations are stunningly fluid and unbelievably realistic — something which, sadly, can't really be conveyed adequately by the static screenshots shown here.

It was during this early development of the synthetic actor technology that *Alone in the Dark* appeared...

"When *Alone in the Dark* first came out I was pretty annoyed that they'd also come up with the idea of using 3D gysts!" admits Ken. "But their technology is substantially behind what we're trying to do. We're trying to use real cinematic techniques, but they're just winging it. And we're using the live-motion capture for the animation, but they're doing all their's by hand. We striving for a much more organic feel in BioForge."

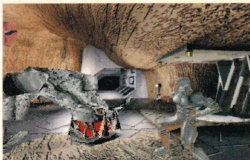
Lex is controlled via the keypad. At its most basic level, the keypad allows you walk around, but by pressing other keys simultaneously Lex can be made to perform a wide range of actions such as punch, kick, jump and use objects. "Performing actions in certain

situations may result in much more grandiose results than normal," adds Ken. "For example, you can jump anywhere, but if you jump in the right situation then something more dramatic might happen. I don't want to give too much away, but that's the general idea..."

Because the player has total control over Lex and can interact with almost every element of his environment, the game play offers a degree of freedom that's unparalleled in computer games. "I think that everyone's going to play their own game of BioForge," believes Ken. "It'll be a little bit different for each person."

"Basically there's often more than one solution to a problem," adds Ken. "You can just slug your way through the whole game if you want to, although you've got to use your mind sometimes. And also there are very frequently times when instead of slugging your way through, you'll find it easier to brain your way through."

The way you play also affects the game's final outcome. "You don't really know who you are when the game starts because you've lost your memory," says Ken. "But by the end you'll discover who you were. Along the way there are a lot of actions you can make that seem ambiguous and don't have any direct story impact — you just make your own moral or ethical choice and the game



With most software companies keen to produce CD-only games, it's a surprise to learn that BioForge is designed for floppy. "One of the things we really trying to impress on everyone," says Ken, "is that BioForge is the start of the Interactive Movie genre, and that everything they've seen before can be put on the shelf. So in order to do that, we felt we had to stay with floppy just for the first product in order to make a real impact."



"I think that players will definitely empathise with Lex," believes Ken. "During the course of the game he keeps a journal, and the player can look at that during the game and read his feelings and thoughts on his experiences, which gives you an insight into his mind and his psyche."

will still be solvable. But at the end of the game, depending on the type of choices you've made, you'll turn out to be one kind of a person or another kind of a person. So if you just kill everybody then you'll turn out to be a mass murderer!

To maintain the movie-like feel, Ken and his team have had to devise a way to give the game's plot a constant forward momentum. "The plot develops kind of like an hourglass," he explains. "You have many, many choices as to what to do, but sooner or later it all heads towards a sub-climax. After that your choices broaden out again and then eventually it narrows again to another sub-climax. It all helps to keep the plot going. If you don't have that then you have an infinitely diverse game that would take an infinite time to write!" (And, presumably, an infinite amount of time to play...)

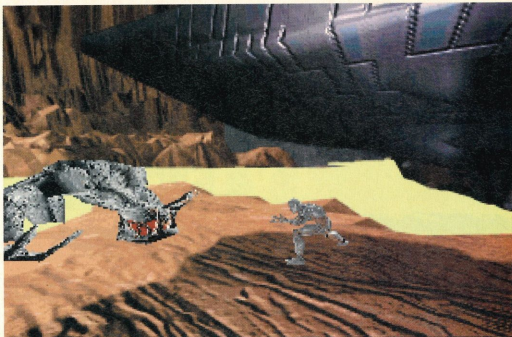
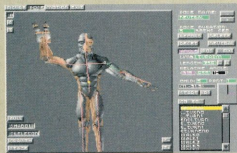
"Also, we tried to make the player feel motivated and give them a clear idea of what their goals are, unlike, say, a graphic adventure where your aim is often nebulous and you don't really know what you're working towards."

The movie feel is further heightened by the use of 'cuts', where the player's view of the action changes depending on where they are and what's happening to them. "It's tough to make camera cuts that are actually dramatic rather than simply being there to keep the player in view," says Ken. "So we've tried to settle on a happy medium. You've got to stay in view so the camera cuts are frequently con-

"[BioForge is] a high-tech product, it's got a lot of flash, it's cutting edge, so on and so forth, but at the end of the day I want it to be fun."

Ken Demarest,
BioForge's Project Leader

(Below) The Salsa interprets the data from The Flock Of Birds sensor suit and pipes it straight into the game's synthetic actors, allowing the 3D models to follow the performer's movements in real-time.



BioForge's sound promises to be special — for a start, the team are using a nifty programming technique to make you think your Sound Blaster card has eight channels of sound. "We actually mix the sound together in software," says Ken, "so that although you've only got four channels it actually sounds like eight."

trolled by that, but there are also cuts to heighten the impact of dramatic moments.

In addition, there are animated 'cut scenes', where the player's view switches to a close-up on a certain action or event. The difficult thing with these, however, is knowing when to integrate them with the action so that they're not jarring or confusing.

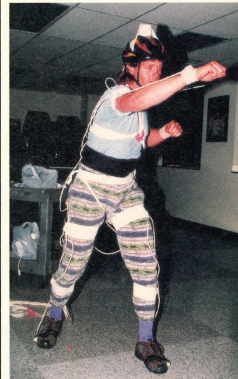
"The key is you only make a cut like that when the player would expect it anyway," explains Ken. "Say the character has to pry open a door. Well, during the prying there's no 'pry' movement, he just starts prying when you ask him to. And during that prying motion you have no control over him — and that's a perfect moment to do a cut-away. And then when the cut-away finishes you cut back to the character, the prying motion finishes, the door opens and control resumes."

"If we were to do a cut scene in a fight then we'd probably wait until you were knocked down and you

were temporarily unconscious. Then when you get back up, control would resume."

The creation of BioForge has been a learning experience for Ken and his team. "You have to come up with a whole new set of rules for Interactive Movies," reckons Ken. "I mean, we've taken as much as we can from movies, but movies don't have to worry about the fact that the lead character may wander into every part of a room, because they control what happens. We're having to make up those rules as we go along. I think we're now starting to establish a clear idea of where we need to go. If there are any mistakes to be made we're definitely making 'em now, rather than later!"

"Even so, as far as I think streaming video games are away from being true Interactive Movies, I still think that we also have a way to go before we can truly earn that title..."



(Above) The Flock of Birds sensor suit in action. "The performers are not 'professional' actors but internal people who have dance, martial arts or mime experience," says Ken.

INTERACTIVE MOVIES: Origin has its say



Richard Garriott, Origin's Creative Director, is something of a legend in the PC games world. It was he who founded Origin way back in the early 80s, and he is also the mastermind behind the incredibly popular Ultima games (the latest of which, Pagan: Ultima VIII, is glowingly reviewed on page 46). He's also a man

with strong opinions, especially about what is and what isn't an 'Interactive Movie'.

"The term 'Interactive Movies' has already become a sort of buzzword with the general press, so it's being applied to a lot of games which aren't really Interactive Movies," believes Richard. "Just because a game has live action video that doesn't automatically make it an Interactive Movie, because you have very little control over the actor. Neither is a game in which you click on an icon, then sit back and watch a scene take place. That's not true interaction or emotional involvement."

"We have some definite ideas of what should be called an Interactive Movie. Plot and pace are critical. Not all our products will be Interactive Movies, but those that are will fall within certain parameters. The challenge will be to continue the evolution of that style of game."

These parameters, as defined by Origin, are outlined below:

- (1) An Interactive Movie employs the conventions of film to tell a story, including the use of synthetic or video-based actors, cinematic camera and editing techniques, dynamic action-sensitive musical score and digitised speech and sound effects.
- (2) In an Interactive Movie, the evolution of the story — including the tempo with which it unfolds — is directed by the game designer, sweeping the player along with it.
- (3) Interactive Movies strive to deliver a seamless integration of the passive and interactive portions of the game, and require a high degree of player interaction to advance the story.
- (4) An Interactive Movie totally immerses the player in the story and provides an emotional context for the gameplay.

Strong stuff. Of course, how closely BioForge adheres to these guidelines has yet to be seen...