y Richard Rouse III

A friend once bet me that I couldn't think of a film-maker who hadn't made a bad movie.   Sadly, she was right; even my own favorite directors - Alfred Hitchcock, Orson Welles, Howard Hawks - had turned out some pretty mediocre films in their time.   But I can name a game designer who has never designed a bad game: Jordan Mechner.   Mechner started his gaming career long ago on the Apple II, creating the brilliantly innovative Karateka (1984) and Prince of Persia (1989) all by himself.   Time was taken off to make a short documentary film, Waiting for Dark (1993), and Prince of Persia 2 (1993), designed but not developed by Mechner, followed and was similarly terrific.   But none of these has prepared us for his most recent work, The Last Express (1997), a furiously unique adventure game set aboard the Orient Express in 1914, immediately before the outbreak of World War I.   Surely one of the best games of this year, Mechner was kind enough to talk to Inside Mac Games about Last Express over the phone from the offices of his development studio, Smoking Car Productions, located in San Francisco.

IMG: As far as game design, it seems that Prince of Persia was a logical extension of what you did in Karateka, and Prince of Persia 2 was in turn an extension of that.   But The Last Express seems to be off in a completely new direction.   What provoked you to do something as different as Last Express?

JM: I guess I don't think of Last Express as being off in a new direction.   It's still just another way to tackle the same basic problem of   how to use a computer game to tell a story with characters and create a sense of drama and involvement for the player.   I think that the adventure game genre has a lot more ground still to be uncovered, whereas with action games there are quite a number of them that work and are successful both artistically and commercially.   There are a number of action game formulas that have evolved since the days of Prince of Persia.   I guess part of what interested me about doing an adventure game was that it seemed to be a wide open field, in that there hadn't been many games that had found a workable paradigm for how to do an adventure game.

So it wasn't the inspiration of other adventure games?

No, on the contrary in fact.   I've looked at adventure games that have been coming out, and it seems... Well, if you look at the old Scott Adams adventures and the way action games were then: it seems like action games have evolved considerably, whereas adventure games have stood still in some ways.   And not just design from an aesthetic stand point, but just in terms of the experience that the player has: the feeling of immersion, and the feeling of life that you get from the other characters.   So I guess it was the challenge that attracted me.

Well, of course in computer game design you're always looking for a setting that will give you the thrills and adventure that you seek, while at the same time it needs to be a constrained space in order to design a good game around it.   Things like cities are very difficult to do, so a train struck me as just the perfect setting for a game.   Because you've got a confined space and a confined cast of characters, and yet you don't have that static feeling that you would get in, say, a haunted house, because the train itself is actually moving.   So you've got the temporal constraint, and you've got the clock ticking.   From the moment the game starts, the train is moving not only towards its destination - Paris to Constantinople - but it's also moving in time, from July 24th to July 27th, from peace to war-time.   So the fact that the capsule you're in is inexorably moving in both time and space and events are changing around you, gives a forward movement and drive to the narrative, which I think works very well for a computer game.

The Orient Express, of course, is the perfect train for a story that deals with the onset of World War I. Because the Orient Express in 1914 was the "new thing;" it was an innovation like the European Economic Community is today, a symbol of the unity of Europe.   It was amazing at the time that it was possible to travel from one end of Europe to the other, a journey that used to take weeks, in just a few days, without trouble at the borders and so on.   On that train you had a cross-section of different people, from different countries, different social classes, different occupations, and so you've really got a microcosm of Europe in one place.   And of course the fact that these people, within a few days, would all be separated along nationalist lines for a war that would last four years and which would destroy not only the social fabric but also the very train tracks that made the Orient Express possible, it was to me a very dramatic and poignant symbol of what that war was all about.   And a great setting for a story.

So would you say your starting point for Last Express was "I want to make an adventure game, what sort of story can I tell in that form?"   Or was it: "Here's a story I want to tell, what type of game will allow me to effectively tell it?"

Definitely the starting point was that Tomi Pierce [co-writer of The Last Express] and I wanted to tell a story on the Orient Express in 1914 right before war breaks out: how do we do that?   I didn't really focus on the fact that it was a switch of genre from Prince of Persia, or what that would mean for the marketing. It just became apparent as we worked out the story that given the number of characters, the emphasis on their motivations and personalities, the importance of dialog and different languages, that what we were designing was an adventure game. I consciously tried to get away from the adventure game feel.   I don't personally much like most adventure games.   I wanted to have a sense of immediacy as you're moving through the train, and have people and life surging around you, as opposed to the usual adventure game feeling where you walk into an empty space in which you can do something.

Was this your reason for adding the "real-time" aspect to Last Express, something we're not used to seeing in adventure games?

Of course it's not technically real-time any more than you would have in a film.   The clock is always ticking, but we actually play quite a bit with the rate at which time elapses.   We slow it down in certain points for dramatic emphasis, we speed it up in certain points to keep things moving.   And we've got ellipses where you cut away from the train, and then you cut back and it's an hour later.

But still, it's more real-time than people are used to in traditional adventure games.

Even in action games.   I'm amazed at the number of so called action games where you just put the joystick down and sit back and watch, and you're just staring at a blank screen.   Once you clear out that room of enemies, you can sit there for hours.

You mentioned film-making back there, and I know in 1993 you made your own documentary film, Waiting

Did your experience with film-making help you in the making of Last Express?

It can be very helpful, but I think it can also be a pitfall.   Film has an incredibly rich vocabulary of tricks, conventions, and styles which have evolved over the last hundred years of film making.   Some of which have been used yet in computer games and really work well, others which are waiting for someone to figure out how to use them, and others which don't work very well, and which kill the games they get imported into.   The classic example being the so-called "interactive movie," which is a series of cut-scenes strung together by choice trees; do this and get cut-scene A, do this and get cut-scene B and lose.   Last Express, because it has such a complex story, we pretty much had to keep the narrative on a tight track.   Whatever you do has to pull you back onto that one linear line that's going from Paris to Constantinople, otherwise it would take three thousand CDs instead of three.   But the experience that the player has I wanted to be one of moving freely around a train, with people going in all directions.   If you see someone walking past you, you should be able to turn around, see them walk down the corridor the other way, and follow them and see where they go.   Or, if you're not interested, you can turn and walk the other way.   You can think of it as a non-linear experience in the most linear possible setting, which is an express train.

All of your games have featured cut-scenes in one way or another, and in Karateka, Prince of Persia, and Last Express they've all been integrated into the game so as to be visually indistinguishable from the gameplay.   Was this a conscious decision on your part?

Absolutely.   I think part of the aesthetic of all three of those games is that if you sit back and watch it, you should have a smooth visual experience as if you were watching a film.   Whereas if you're playing it, you should have a smooth experience controlling it. It should work both for the player and for someone who's standing over the player's shoulder watching.   Cut scenes and the gameplay should look as much as possible as if they belong to the same world.   In fact, Karateka actually used cross-cutting in the action: when you're running toward the guard, and then cut to the guard running toward you, and then cut back to you, and then cut back to the shot where the guard enters the frame.   In cross-cutting, there's actually time that's elapsing when you cut away.   There's suspense as you're running toward each other and you know the meeting is imminent.   That's probably the most primitive example.

But it's the same basic principle you have in Last Express: say you're in point-of-view, you see August Schmidt walking to you down the corridor, then you cut to a reaction shot of Cath, the player's character, seeing him coming.   Then you hear August's voice, and you cut back to August, and without realizing it you've shifted in to a third-person type of scene.   Then as soon as it's over, August walks away, cut to Cath looking at August, and when you cut back you're back in point-of-view and now you're controlling it again.   That's actually an adaptation of a device that's used a lot in film, a classic example being Alfred Hitchcock's Rear Window.   The whole film is built around the point-of-view motif, where about half the movie is seen literally through James Stewart's eyes.   But then as soon as you cut back to him, you're seeing him, the main character, the stand-in for the viewer, talking to other people, arguing with his girlfriend, and everything else that goes on in that movie.   So that's the basic idea between the construction of Last Express in terms of montage.

On the other hand, in Prince of Persia 2, the cut-scenes were actually painted pictures that looked quite a bit different from the actual game play.   I seem to recall not enjoying those quite so much...

I agree with you about that.   There's a distancing effect to those cut-scenes, they make you feel like you're watching a story-book.   But it was the effect we were going for at the time.

Right now there seems to be a trend away from full motion video cut-scenes in computer games...

And rightly so, because most of the games with full-motion cut-scenes cost five times as much and they didn't deliver five times as much game-play.   Also, there's the problem that the quality of the cut-scenes in most cases was pretty low, if you compare it to good TV or good movies.

My hope is that Last Express offers something that hasn't really been offered by any other adventure game, or actually game of any genre, which is to really find yourself in a world that's populated by people. Interesting, well-rounded characters, that are not just physically distinguishable, but have their own personality, their own places in the story, their own plans of action. And through the fairly conventional point-and-click mechanism, you're actually interacting with a world that's not just visually rich but richly populated.

The basic idea was to keep it as simple as possible. Point-and-click appealed partly because I always saw Last Express as a game that would appeal to a more mainstream audience of adults. My grandmother, for instance; people who don't usually play computer games and aren't particularly handy with a joystick, and aren't going to sit still to learn large number of keys and what they all do. Pointing and clicking is something that adults in our society know how to do, so the challenge there was to construct a game where you wouldn't have to know how to do anything beyond how to pick up a mouse and move it over the screen. The cursor changes as you pass over different regions to show you what you can do: you can turn left, you can talk to a different character. The specifics of how that works evolved as we tested it. At certain points we had a large number of cursors or a smaller number. During the development we worked out problems like: "Do 'up' and 'forward' need to be different shaped cursors?" We decided yes they do. "Do 'look up' and 'stand up' need to be different?" We decided, no, they can both be the up arrow. But the basic idea that it would be hot-spot based, point-and-click was very much a part of the original design.

The whole project, because of its size, was a huge logistical challenge. The film shoot was actually only three weeks long. Which is not very much, when you consider that an ordinary feature film shoot takes at least four weeks, shooting an average of three screenplay pages a day. Whereas for three weeks, we shot about fifteen screenplay pages a day. We had a few tricks that allowed us to move that fast: the fact that it was all blue-screen, the fact that we were shooting silent and had recorded the sound previously, and the fact that we were "under cranking" and shooting seven and a half frames per second in some scenes, five frames per second in others. With the goal being to select key-frames and then reanimate them, as you see in the finished game. All that let us shoot a lot of material.

But in terms of keeping track of it... If you were on the set, you'd see it felt different from a regular film shoot. Just to give an example, the first three days of the shoot we were in the corridor. What we did there, was we laid out a fifty foot track representing the train corridor, with yellow lines on the blue-painted floor with a blue-painted seg-wall behind it. And for three days we basically marched all thirty characters on the train up and down that corridor. The key moment, of course, being when a character walks toward the camera, briefly makes eye-contact with an expression - friendly or unfriendly - the nuance of that glance being one of the things that brings you into the game as Cath, makes you feel that you're not just a phantom presence to the train but that people are reacting to you, even as they pass you in the corridor and say "excuse me." So that glance, and then of course, pushing past the camera, walking down the corridor in the other direction, moving away from the camera. For three days we filmed that, and we had it basically as much down to a science as we could. The camera was locked down for three days: it didn't move. And we filmed each character from that exact angle, which was the key of course, because if the camera moved, then we would have footage that didn't line up.

After three days in the corridor we moved to the restaurant, and again we would do that in a very unusual

way.   We would lock down the camera in one position, say, the seated at the table looking straight ahead in front of you view.   And we'd set up tables there, and then film every piece of action that could be seen from that view - August Schmidt walks in, sits down, orders dinner, the waiter brings him the food, he eats it, he puts down his napkin, gets up, and walks away.   We would film from that angle.   Then the next day when we'd have the camera set up from a different dining room angle, we'd have the same actor repeat the same actions.   So instead of shooting scene be scene   and shooting each scene from a series of angles, instead we would do it angle by angle.   And from each angle we would shoot all the different actions that could take place.   So in order to make the shoot as efficient as possible, it was like a jig-saw puzzle, figuring out which actors you bring in on which day and when you can let them go, and when you move the camera, and is it more economical to move the camera in the morning so that we can send this actor home early, or should we leave the camera where it is and pay the actor for the whole day.   That times nineteen days was a logistically very complicated film shoot.   With a lot of the action being filmed from multiple angles, since in the game, you can't really guarantee what angle the player's going to see it from.

And once it was all shot, it must have been a tremendous challenge to keep it all straight.

We did the editing on an Avid which was actually incredibly helpful; without that I don't know what we would have done.   We dumped it all onto these really huge hard-drives on this Macintosh-based non-linear editing system, and selected the frames we wanted.   We actually pushed that Avid system to its limits.   At one point our film editor had to call tech support.   He's a professional film editor, and he uses these systems every day.   But he'd never encountered a situation where the system would slow down the way that it was there.   So he called, and they asked how many effects he had, and he told them.   They were startled, and said "Wow, I can't believe it's still working!"   Because we had ten or fifteen times as many frame dissolves in just one of our scenes as they expected anyone would ever have in a normal feature film.   We were picking still frames and dissolving from one to another, so that every frame in the game was a special effect.

The official number is that we had 40,000 frames of animation in the game.   In some ways that number is misleadingly low.   If you watch a typical dialog scene you'll notice that we're dissolving between still frames on the average of once every second, or once every two seconds. Whereas a conventional film is 24 frames per second.   So to get the equivalent in terms of how much action and sound is really covered, you can multiply 40,000 by 24.   Also, a lot of those frames are reused.   You've got 150 frames of the character walking down the corridor, and then 150 frames walking down the corridor in the other direction. With those 300 frames, the same character might walk 500 times over the course of the game.   Also, you might see two characters pass each other, whereas before you saw them separately.   When you walk into the dining room, you're seeing six tables, and each table can have its own action going on independently.   It might be that you play the game from start to finish five times.   And on the sixth time you might see two characters in the room together, whereas before they were always in the room separately.   Just because you played the game differently.   So the number of combinations of that footage is pretty much unlimited.

So what made you come up with the dissolving-between-frames every one or two seconds effect used in Last Express?   Why didn't you use the more traditional, full motion style throughout the game?

From our point of view, full motion is basically a very expensive special effect.   It looks great, as in the corridors, as in the fights.   But if we had decided to use that for the entire game, I think we would have ended up with something that was visually very flashy but not very deep.   We're limited both by the amount of frames that can be kept in RAM, and there's the number of CDs of course.   But ultimately you're limited by the processor's ability to have a number of different animations happening on the screen at the same time.   When you walk into the restaurant and it's full of people, that's possible partly because each character is only animating every few seconds.   That's one consideration, the physical limitations of the computer.

But there's also an aesthetic component, where, say, we could actually do it, and we had a thirty second

loop of a character eating dinner.   Sooner or later you realize the character is repeating.   So you say "Why is it that when he takes a sip from his wine glass and then takes a bite of steak, the steak keeps getting replenished every time he eats it?"   That's not really helpful to the game, to have the player's attention distracted by following those little full motion bits.   Basically, when it gets down to it, we decided that the important effect for the game is that the character is here, having dinner for an hour and fifteen minutes.   And any time during that hour you can talk to him.   And the fact is that dissolving between still frames gave just as good a sense of dining as the full motion would, and in some ways better, because you don't have that glitch when the film loops.   So, with this convention, once the player accepts it, it opens up the world and gives you the ability to tell this huge story that goes on for three days and three nights with thirty characters doing all kinds of things, that wouldn't be possible without the convention.

IMG: I noticed in the credits that for almost all the characters you have one actor doing the physical acting - what the player sees on the screen - and another doing the voice.   Why did you decide to use different actors for the visual and audio aspects of the game?

Casting was a tremendous challenge with a cast where you've only got two Americans, and everybody else is Russian, Austrian, Serbian...   We've got a dozen different languages on the train.   And because people are not only speaking English with a foreign accent but they're actually speaking their own language, sub-titled, for large portions of the dialog.   So casting American actors who can do a fake German or French accent just wasn't acceptable to us.   We wanted native speakers for each language. I think we were very lucky to get such a good cast both for the faces and for the voices.   But to ask for the perfect face, the perfect voice, and the perfect nationality to be united in one person for each role would have been too much to ask.   It would have meant making major compromises there.

Tatiana is a case in point.   We found someone who sounds like a Russian princess in 1914, and found someone who looks like one, but they're not the same person.   One lives in L.A., one lives in San Francisco, one's Russian and one's not.   So using separate voice and physical actors gave us more flexibility, and avoiding lip-synching made it easier.   I think when you lip-synch and dub, you lose something in the performance.   We did the opposite.   We recorded the voices first, and then created animated visuals to match, so the voice actors were free to create their own performance, as they would with a radio play, or doing a Disney cartoon. It gives you a much more natural voice performance than overdubbing.

Reality seems to have been a dominant goal in your design of the game; whether it's the native speakers for the voice acting or if it's the authentically modeled train cars.   Why did you go to such great lengths to make the game as real as possible?

I think it's a matter of respect for the player.   It's something that players feel, whether or not they're history buffs.   Whether it's a history world or a fantasy world, I think that players respond to the amount of detail and consistency that the creators of the game put into it.   And even if you don't pay attention to the conductors enough to figure out that one of them is close to retirement and the other one is a young married guy, just when you pass them in the corridor and overhear a little bit of one of their conversations, you get the feeling that you're hearing a real conversation between two real conductors. Whereas if we hadn't thought it through to that extent, if the actors playing the conductors didn't have any idea of who their characters were - after all, they're only conductors - then when you walked by and you'd hear something artificial, you'd think "You know, that sounds like something they just staged for my benefit." The fact that what you see in the game is just the tip of the iceberg, and that all the characters have their own history, and their own reality under the surface, you feel the mass of that, and the weight of it, though you don't actually see anything more than the tip.

Do you think computer games in general should strive for greater realism?

Well, realism is a bit of a loaded term.   I don't mean to imply that games should be more realistic in terms of representing our world.   Even something like Super Mario Bros., which is completely a fantasy setting,

it's got it's own kind of consistency.   If a character can jump off a ledge and float to the bottom, you shouldn't have another scene where he jumps off and he gets crushed.   So as long as the rules of the world are respected throughout, and the creators actually took the time to think "Wait, is there gravity in this world or isn't there, and under what circumstances can you really get hurt?"   As long as the game plays by its own rules I think players will accept it.   Of course, looking at Last Express, we chose a real historical moment, and we're very conscious about trying to represent faithfully what was going on in the world at that time, and that drew the constraints of our particular world.

Well to begin with, I like the cartoon look aesthetically.   I think the look of cartoon people against a 3D rendered background is very attractive.   And of course, going back to when we were kids, with films like Snow White and the Seven Dwarves.   They had their own technical reasons why they had to be flat - they were painted on cells - but they bring out the character nicely, and I think it's a look that has a lot of good connotations for those of us who as kids wanted to step inside the cartoon and become one of the characters.

I think for computer games, there's another advantage to having the characters be cartoons, as opposed to live, filmed people.   The experience of the computer game player depends on being able to put yourself into a fantasy world, and being able to suspend disbelief, and believe that what you're doing actually has an effect on these fictional characters.   If you're watching a filmed actor, intellectually you know that this was someone who was filmed on a sound stage, in a costume, with lights and cameras around them, and whatever he's saying and doing on the screen is what he was saying and doing on the set, when the game was filmed.   So you know that you're watching a cut-scene.   If you're watching Harrison Ford there's no way you're going to get Harrison Ford to do anything different from what he did when they filmed it.   Whereas with a cartoon, they're not real to begin with, so if a cartoon character can walk and talk, why couldn't he say something different depending on what you said to him last time you met?

So it adds to the suspension of disbelief?

Or, at least, it doesn't break it, whereas filmed action would.   And I think that's part of the reason why video cut scenes haven't been successful in computer games at large.   It's just not a good fit.   And finally, of course, there's one last reason, which is a historical one.   Most of the images we have, culturally, from 1914 come to us through drawings of the time: newspaper drawings, magazine advertisements, poster art by artists like Alphonse Mucha and Toulouse-Lautrec, which were in an "Art Nouveau" style which was really the forerunner of the modern comic book.   So I think when we see someone in 1914 dressed as a cartoon, it feels right in a certain way, whereas if we saw someone as a 3D model, it wouldn't have that kind of resonance.

So do you think a game with a more modern setting could use the same cartoon-character approach to the visuals?

Well, I like the look a lot, and it could definitely work in a lot of different situations.   I don't think it has to be a historical setting.   But that was just one more reason why, for Last Express, it was just too perfect to resist.

So since the characters ended up looking like cartoons, why didn't you just draw them from the very start, instead of filming actors and then making them look like drawings?

Well one reason was that, to get the high quality of animation and cell-type expression that you have in, say, a Disney film, you need to spend as much money as Disney spends.   As expensive as this game was by computer game standards, it's still a tiny fraction of the budget Disney would spend on an

animated feature.   We wanted to assure consistency that the same character would look like the same character, whether they were seen from up-close or far away, angry or happy, and from different, difficult angles.   And to achieve that for 40,000 animated frames, there's just no way you're going to be able to do that on the budget that we had.

The goal of our automated rotoscope was to take a black-and-white filmed frame and to turn that into something resembling a pen-and-ink line drawing, where an artist could pull up that frame and colorize it in less than two minutes.   We got to the point where we had it set up like an assembly line.   And not only that, but you could have two different artists working on the same characters, and because the digitization and the rotoscoping were done by the computer, it would yield very similar results.   Anna looks like Anna, regardless of who colored her for that sequence.

We didn't want it to look like it was a processed film image, and we didn't want it to look exactly like a cartoon.   If you could see a character walking toward you down the corridor and not really be sure if it had been realistically drawn or if it was based on a filmed image, then we pretty much would have achieved our goal.   And I think we did. Occasionally we have someone say "Wow, this is so realistic. Did you draw all this by hand?"   If they can't tell it was filmed, then it worked.

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Be sure to check back next month for Part 2 of our interview with Jordan Mechner, as he talks about all manner of interesting topics, including: non-linearity in computer games and Last Express in particular; the game's unique save-game system; why Czechoslovakians think less music is better than more; how working with a massive team on Last Express differed from his "lone wolf" days on Karateka and Prince of Persia; why development on Last Express took so darn long; and just what his allegiances to Apple and the Macintosh are these days...